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Sexually transmitted infections, including HIV, in the Netherlands in 2007

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RAPPORT IN HET KORT

Seksueel overdraagbare aandoeningen, waaronder HIV, in Nederland in 2007

Chlamydia, gonorroe, syfilis

Net als in 2006 was chlamydia in 2007 de meest gediagnosticeerde bacteriële geslachtsziekte in de soacentra, vooral bij jongeren. Het percentage positieve chlamydiatesten onder heteroseksuele mannen en vrouwen daalde enigszins, voor het eerst sinds vier jaar (van 10,6% naar 10,1%). In 2006 stabiliseerde dit percentage bij mannen die seks hebben met mannen (MSM), en die trend zette door in 2007. Het percentage positieve gonorroe-, syfilis- en hivtesten nam net als voorgaande jaren af in 2007 (respectievelijk 2,4%, 0,9% en 0,5%). Deze infecties werden het meest gediagnosticeerd bij MSM.

Hiv

In 2007 zijn er 306 nieuwe hivdiagnoses gesteld in de soacentra, ongeveer een derde van de 864 hivpositieven die dat jaar landelijk in de hivcentra zijn gemeld. Eind 2007 waren in totaal 14.019 personen in Nederland met hiv geregistreerd. Het aandeel van MSM onder de nieuw hivinfecties nam in 2007 verder toe. Net als eerdere jaren werd in de soacentra bij MSM die bekend zijn met hun positieve hivstatus vaak nog een andere geslachtsziekte gevonden (45%). In deze groep is sinds 2004 regelmatig LGV, een agressieve variant van chlamydia, en sinds 2007 hepatitis C gediagnosticeerd. Versterkte surveillance en innovatieve interventies zijn nodig om verdere verspreiding onder MSM en naar andere groepen te voorkomen.

Migranten

Onder bepaalde migrantengroepen in Nederland (onder andere afkomstig uit Suriname, de Nederlandse Antillen en Aruba) komen hiv, chlamydia, gonorroe en syfilis relatief vaker voor dan onder autochtone Nederlanders. Ook deze constatering vraagt om vernieuwende maatregelen die op de bevolkingsgroepen zijn toegespitst.

De soacentra bieden soazorg aan hoogrisicogroepen. In 2007 hebben ruim 78.000 personen zich daar laten testen, een toename van 13% ten opzichte van 2006.

Trefwoorden: hiv/aids, soa, surveillance, trends, Nederland

CONTENTS

ABSTRACT

Sexually Transmitted Infections, including HIV, in the Netherlands in 2007

Chlamydia, gonorrhoea and syphilis
In 2007, chlamydia was the most common bacterial sexually transmitted infection (STI) diagnosed in Dutch STI centres. Similar to previous years, infections were reported especially in young heterosexuals. The proportion of positive chlamydia tests among heterosexual men and women decreased slightly for the first time in four years (from 10.6% to 10.1%). In 2006, this proportion had stabilized in men who have sex with men (MSM) with the trend continuing in 2007. The positivity rate for gonorrhoea (2.4%), syphilis (0.9%) and HIV (0.5%) continued to decrease in 2007. These infections were most frequently diagnosed in MSM.

HIV
In 2007, 306 new positive HIV cases were diagnosed in STI centres in the Netherlands. This number amounts to about one third of the total number of 864 positive HIV cases registered nationally. At the end of 2007, a total of 14,019 HIV cases in care were registered in the Netherlands. The proportion of MSM among new HIV cases rose further in 2007. In line with previous years, concurrent STIs were diagnosed very frequently among MSM visiting STI centres (45%) who had known HIV positive status. In this group of men, *Lymphogranuloma Venereum* (LGV) an aggressive type of chlamydia, has been reported frequently since 2004; this has also been the case for hepatitis C since 2007. In this group of men, strengthened surveillance and innovative interventions are warranted in order to prevent further transmission both among MSM and to other population groups.

Migrant populations
In some specific migrant groups in the Dutch population -- for example, people from Surinam, the Netherlands Antilles and Aruba -- HIV, chlamydia, gonorrhoea and syphilis are more common than in the autochthonous Dutch population. This indicates the need for targeted intervention by risk profile.

The specialised STI centres in the Netherlands offer STI testing and care targeted at high risk groups. In 2007, approximately 78,000 people used this service amounting to a rise of 13% compared to 2006.

Key words: HIV/AIDS, STI, surveillance, trends, the Netherlands

PREFACE

This annual report presents the national surveillance data and a review of the epidemiology of sexually transmitted infections (STI), including HIV/AIDS, in the Netherlands in 2007. The report aims to produce an overview of recent trends and current developments in the field of STI from data sources available.

We expect that this report contributes to a better understanding of the distribution and determinants of STI, including HIV, in the Netherlands, resulting in further targeting of (preventive) interventions and assessment of their effectiveness on STI transmission. The information is directed at policy makers, researchers in the field of STI and related subjects as well as others interested in STI trends in the Netherlands. More information on STI and HIV in the Netherlands is available at www.soahiv.nl and www.hiv-monitoring.nl. A copy of this report can also be downloaded in PDF format from www.soahiv.nl.

Acknowledgements
We gratefully acknowledge the cooperation of physicians, public health doctors and nurses, microbiologists, epidemiologists, dermatologists, behavioural scientists, prevention workers and other professionals working in the field of STI and HIV. We would like to thank the following organisations for their continuing collaboration in collecting data: the STI centres (STI clinics and municipal health services), HIV Monitoring Foundation (HMF) and GGD Nederland. We also thank SOA AIDS Nederland, Rutgers Nisso Group, HIV Vereniging, Schorer Stichting, SWAB, NIGZ, ISIS, Nederlandse Werkgroep Klinische Virologie, as well as the other units in the Centre for Infectious Disease Control: Laboratory for Infectious Disease and Screening (LIS) and Policy, Management and Advice Unit (BBA), COM (Consultant Microbiologists), LCI (Preparedness and Response Unit) and the connected quality working group (landelijke kwaliteitswerkgroep aanvullende curatieve soa zorg) for their support.

Further information
Any comment or suggestion to improve the usefulness of this report is much appreciated and can be sent to soahiv@rivm.nl.

SAMENVATTING

In 2007 werden in totaal 78.062 nieuwe soaconsulten uitgevoerd bij de soacentra, waarmee het aantal bleef stijgen, met 13% ten opzichte van 2006. De soacentra richten zich op hoogrisicogroepen door toepassing van een landelijk geadviseerd triagesysteem. Deze hoogrisicogroepen, zoals mannen die seks hebben met mannen (MSM, 28% van de mannelijke bezoekers in 2007), personen afkomstig uit soa/hiv endemische gebieden (15%) en jongeren (41% beneden de 25 jaar oud), worden gratis getest. In de tweede helft van 2007 voldeed 94% van de soaconsulten aan de gestelde criteria voor hoogrisico of gaf aan anoniem getest te willen worden.

Bacteriële soa

In 2007 was chlamydia opnieuw de meest gediagnosticeerde bacteriële soa in de soacentra met 7801 gerapporteerde gevallen. Het percentage positieve chlamydiatesten bij heteroseksuele mannen en vrouwen daalde voor het eerst in 5 jaar (10,1%). De meerderheid van de chlamydiadiagnoses (56%) werd bij heteroseksuele jongeren onder de 25 jaar gerapporteerd. Bij MSM stabiliseerde het percentage positieve chlamydiatesten in 2006 en deze trend zette door in 2007. LGV, een aggressieve variant van chlamydia, werd alleen bij MSM gevonden. Sinds de uitbraak van LGV in 2004 wordt deze infectie nog steeds regelmatig gevonden: in 2007 werden maandelijks 3-10 gevallen van LGV gediagnosticeerd. Het percentage positieve gonorroe- en syfilistesten nam verder af in 2007 (2,4% en 0,9%). Beide infecties werden het meest gevonden bij MSM (53% van gonorroediagnoses en 83% van syfilisdiagnoses) en dan vooral in de leeftijdsgroepen vanaf 35 jaar. Specifieke migrantengroepen (onder andere afkomstig uit Suriname, Nederlandse Antillen en Aruba) hadden relatief vaker een positieve testuitslag voor chlamydia en gonorroe (mannen en vrouwen), en voor syfilis (alleen heteroseksuele mannen) dan autochtone Nederlanders, wat aangeeft dat preventie gericht op specifieke groepen essentieel is.

Virale soa

In de soacentra werden 306 nieuwe hivdiagnoses gesteld in 2007. Het percentage positieve hivtesten nam af voor MSM tot 2,8% en bleef stabiel bij heteroseksuele mannen en vrouwen (0,1%). In 2007 werden 864 nieuwe aanmeldingen van hivpositieve personen gerapporteerd in de anonieme nationale hivregistratie bij de Stichting HIV Monitoring. Eind 2007 waren in totaal 14.019 personen met hiv in Nederland geregistreerd. Het aandeel nieuw gerapporteerde hivinfecties bij MSM nam in 2007 verder toe tot 65% en de (mediane) leeftijd op het moment van diagnose nam toe tot 40 jaar. Bij bijna de helft van de hivpositieve MSM soacentrumbezoekers (45%) werd een soa gediagnosticeerd. Zowel in preventie als interventie zijn innovatieve methoden nodig om de continue soa- en hivtransmissie in deze hoogrisicogroep te verminderen.

De meerderheid van de heteroseksuelen met hiv rapporteerde de hivinfectie te hebben opgelopen in het land van herkomst: overwegend in sub-Sahara Afrika, maar ook in Latijns Amerika. Migratie blijft een belangrijke factor, ondanks een dalend aandeel in de nieuw gerapporteerde hivinfecties.

Het aantal diagnoses van andere virale soa steeg in 2007 licht in de soacentra. Het aantal diagnoses van genitale wratten – de meest gediagnosticeerde virale soa in de nationale soasurveillance – nam toe met 7% en het aantal diagnoses van genitale herpes (HSV) nam toe met 13%. Hierbij moet worden opgemerkt dat rapporteren van genitale wratten en HSV in het registratiesysteem vooralsnog facultatief is, waardoor het aantal diagnoses niet vergelijkbaar is met die van de besproken bacteriële soa en hiv. Het aantal gevallen van acute hepatitis B verminderde met 9% van 2006 tot 2007 in de aangifte van meldingsplichtige infectieziekten. Genotype A was het meest voorkomende genotype in de acute hepatitis B-gevallen, net als in voorgaande jaren. In 2007 was er onder MSM een duidelijke stijging van het aantal gerapporteerde gevallen van acute hepatitis C opgelopen via seksueel contact (van 11 naar 29).

SUMMARY

With a total of 78,062 new STI consultations carried out in the national network of STI clinics in the Netherlands in 2007, the number continued to increase, by 13% compared to 2006. The STI clinics target high risk groups by patient selection based on a standardized list of criteria. High risk groups, such as men who have sex with men (MSM, 28% of male attendees in 2007), persons originating from STI/HIV endemic areas (15%) and young people (41% is under 25 years), are tested for free. In the second half of 2007 94% of clinic attendees fulfilled one or more of the criteria or wanted to be tested anonymously.

Bacterial STI
In 2007, chlamydia remained the most commonly diagnosed bacterial STI in the STI centres. Positivity rates of chlamydia in heterosexual men and women slightly decreased for the first time in 5 years. The majority (56%) of chlamydia cases were diagnosed in heterosexuals, younger than 25 years of age. In MSM, the positivity rate stabilized in 2006 and this trend continued in 2007. LGV, a vicious strain of chlamydia, was found in MSM only. Since the outbreak of LGV in 2004, this infection continues to be reported regularly: in 2007 3-10 cases per month were diagnosed in MSM. The percentage positive for gonorrhoea and syphilis continued to decrease further in 2007. Both infections were most prevalent among MSM (53% of gonorrhoea and 83% of syphilis cases) especially in the age groups of 35 years and older. Specific ethnic minorities (for instance from Surinam, the Netherlands Antilles and Aruba) had higher positivity rates for genital chlamydial infection, gonorrhoea (men and women) and syphilis (heterosexual men only) than autochthonous Dutch, pointing to the need for targeted intervention by risk profile.

Viral STI, including HIV
At the STI centres, a total of 306 new HIV cases were diagnosed in 2007. HIV positivity rates at the STI centres slightly decreased to 2.8% in 2007 for MSM and remained fairly stable for heterosexual men and women (0.1%).
In 2007, 864 new HIV-positive persons were recorded in the anonymous national HIV registry of the HMF. As of December 2007, a total of 14,019 HIV cases, under medical care, had been recorded in the Netherlands. The proportion of MSM among HIV cases reporting for care increased over time, up to 65% in 2007; in addition the (median) age at diagnosis increased to 40 years among MSM. Nearly half of the HIV-positive MSM consulting the STI centres (45%) were co-infected with another STI. STI-prevention and -intervention programmes need to adopt innovative methods specifically aimed at bringing down the transmission in this high-risk group.

The majority of HIV-positive heterosexuals reported to have acquired their infection in the country of origin: mainly in sub-Saharan Africa and to a lesser extent in Latin America. Immigration thus remains an important contributor, although the proportion of new HIV cases from this origin is decreasing.

The number of other viral STIs increased in the STI centres in 2007. The number of genital warts reported – the most common viral STI in the national surveillance- increased by 7%

and the number of cases of *Herpes genitalis* (HSV) increased by 13%. Reporting of these two STI is at present not obligatory; hence the number of diagnoses is not comparable to the bacterial STI and HIV described above. The number of acute cases of hepatitis B decreased by 9% from 2006 to 2007. Genotype A was the most common type among the acute cases of HBV, similar to the previous years. In 2007 a clear increase in cases of acute hepatitis C acquired by sexual transmission was reported among MSM.

LIST OF ABBREVIATIONS

ACS	Amsterdam Cohort Studies
AIDS	Acquired Immune Deficiency Syndrom
ATHENA	AIDS Therapy Evaluation in the Netherlands
CSW	Commercial Sex Worker
CVB	Centrum voor Bevolkings Onderzoek, Research Centre for Population Studies
GRAS	Gonococcal Resistance to Antimicrobials Surveillance programme
HAART	Highly active anti-retroviral therapy
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HIV	Human Immunodeficiency virus
HMF	HIV Monitoring Foundation
HPV	Human papilloma virus
HSV	Herpes simplex virus
IDU	Intravenous Drug Users
LGV	Lymphogranuloma venereum
MSM	Men who have sex with men
NA	Not available
RIVM	Rijksinstituut voor Volksgezondheid en Milieu, (National Institute for Public Health and the Environment)
STI	Sexually Transmitted Infections
WSW	Women who have sex with women

INTRODUCTION

This report describes current trends in the epidemiology of STIs, including HIV, in the Netherlands. It is prepared by the Centre for Infectious Disease Control (CIb) at the National Institute for Public Health and the Environment (RIVM). The CIb collaborates with various partners in the field of STI to collect data for surveillance and to generate insights into trends and determinants: the STI centres, the HIV Monitoring Foundation (HMF), public health laboratories and other health care providers.

Available data on STI from surveys, national registries and cohort studies are compiled in this report and provide an overview of the current status of STI, including HIV in the Netherlands. Preliminary data have been presented in the Thermometer (April 2008) and were discussed at the annual expert meeting on the surveillance of STI and HIV in June 2008.

Outline of the report

In Chapter 1 the methodology of STI surveillance in the Netherlands is described, including all sources of data used for this report. In Chapter 2 the characteristics of STI clinic attendees are described for 2007. Chapter 3 deals with bacterial STI (chlamydia, gonorrhoea and syphilis) in the national surveillance of STI and Chapter 4 focuses on viral STI, including HIV, hepatitis B, C, genital warts and genital herpes. In Chapter 5 an overview is given of specific high risk groups in the Netherlands. Conclusions and recommendations are described in Chapter 6.

1 METHODOLOGY OF STI AND HIV SURVEILLANCE

1.1 National surveillance at STI centres

Since 1995 STIs are registered into an STI registration at the RIVM in the Netherlands. In 2003, an STI sentinel surveillance system was put in place, which reached national coverage in 2004 with inclusion of all major STI centres. Since January 2006, reporting into the national STI surveillance system is organised in eight regions, with each one STI centre that is responsible for regional coordination of STI control (Figure 1.1). In total, 32 specific STI centres, mostly within the municipal health services, provide low threshold STI/HIV testing and care, free of charge, targeted at high risk groups and persons who want to be tested anonymously. All consultations and corresponding diagnoses are reported online to the Centre for Infectious Disease Control for surveillance purposes. The unit of reporting is 'new STI consultation', in which laboratory testing and/or medical examination is carried out.

In this report, the results of national surveillance of STI centres are presented with respect to the number and nature of new consultations and diagnoses. Trends in postivity rates by risk profile (based on demographic and behavioural indicators) in time are based on data from the STI centres in the national surveillance since 2004. Where data were not complete for a specific period or STI centre, this is indicated. We focus on the major bacterial and viral STI, including HIV infection.

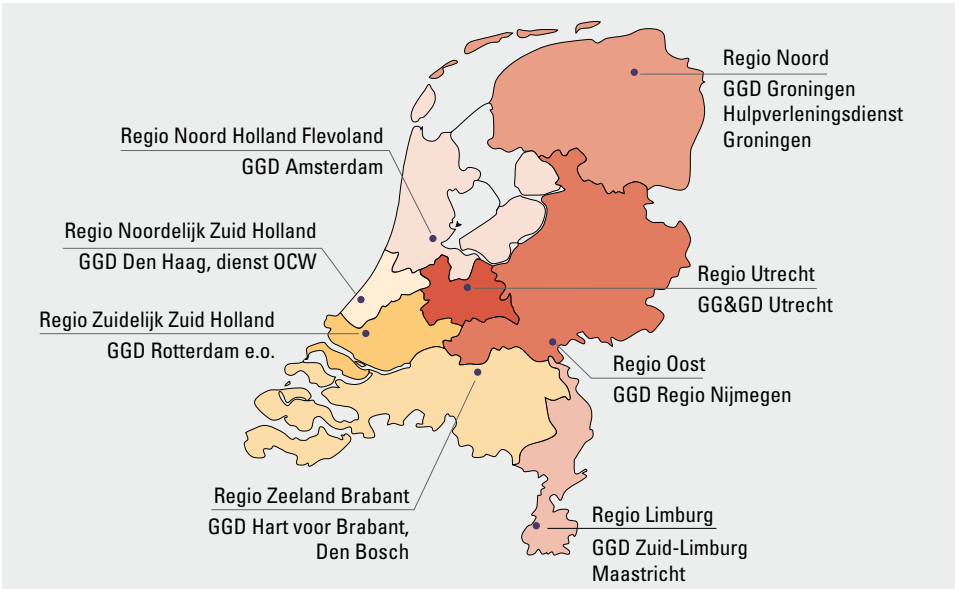


Figure 1.1: Eight regions with coordinating STI centre indicated

The reporting of consultations is facilitated by a web based application (SOAP). Individual anonymised reports contain epidemiological, clinical and microbiological data on a wide range of STI. Until recently, reason(s) for STI consultation were reported. Since July 2007 however, the case report changed to include specific data on indicators for high risk, to assist efficient targeting of services. Currently, persons matching one of the following criteria: (1) presence of STI-related symptoms, (2) notified or referred for STI-test, (3) age below 25 years, (4) MSM, (5) involved in commercial sex, (6) originating from an HIV/STI endemic area or (7) number of sexual partners in previous six months above average (three or more) are considered to be at increased risk for STI acquisition and in order to prevent ongoing transmission they can be tested free of charge in the STI centres. Furthermore, persons who indicate they want to be tested anonymously can also make use of the STI centres to guarantee 'low threshold' STI care.

Behavioural surveillance

In 2006 a limited set of key indicators was added to the STI surveillance.[1] These include: the number of partners in the last six months, condom use at last sexual intercourse and sexual contacts abroad in the last three months. STI centres and individual clinic attendees are free to decide to ask or answer these questions. In addition, other data such as the date and result of previous HIV-test and previous STI diagnosis were collected to support behavioural surveillance linked to epidemiological and microbiological outcomes. Behavioural indicators from the STI centre Amsterdam are (not yet) available in the SOAP database. In the text and tables of the report, non-availability of data is indicated where necessary.

1.2 Antimicrobial resistance of gonococci in the Netherlands

In 1999, the surveillance of antibiotic resistance of gonococci at national level was discontinued and since then insight in gonococcal susceptibility patterns has been limited. Concern for increasing resistance to quinolones at (inter)national level led to a RIVM survey of resistance of gonococci in 2002.[2] The results demonstrated the need for a nationwide surveillance of gonococcal antimicrobial resistance. [3-6] In 2006, the Gonococcal Resistance to Antimicrobials Surveillance programme (GRAS) has been implemented in the Netherlands. This surveillance consists of systematically collected data on gonorrhoea and resistance patterns linked with epidemiological data. Participants are STI clinics and associated laboratories.

1.3 National HIV screening

Blood donors have been screened on HIV since the first HIV test became available in 1985 (www.sanquin.nl). Standard HIV screening is offered to all pregnant women since January 2004 (opting out method). The test is offered in the first trimester of pregnancy as part of the prenatal screening that includes also hepatitis B (since 1990) and syphilis

(since 1960).[7] Currently, nationwide data are being analysed and are not yet available for publication. Since 2006, the Centre for National Screening Programmes (CVB) is coordinating the screening programme on infectious diseases in pregnant women. The Centre for Infectious Disease Control is currently preparing an evaluation of this programme. In Amsterdam, pregnant women have been tested for HIV from 1988 onwards in a sentinel surveillance study in two hospitals and an abortion clinic. Since 2003, all pregnant women in Amsterdam are screened for HIV and these data are described.[8]

1.4 Anonymous HIV surveillance at STI clinics

HIV surveillance among STI clinic attendees is conducted since 1991 in Amsterdam and since 1994 in Rotterdam. In Amsterdam, two cross sectional studies including 1000 visitors each are conducted every year. Since 1997, HIV testing is promoted at all STI clinics in the Netherlands as part of an active HIV testing policy that was implemented following the accessibility of Highly Active Antiretroviral Therapy (HAART).

1.5 HIV incidence data

HIV incidence data are obtained from the Amsterdam Cohort Studies (ACS) on HIV/AIDS, which started in 1984 among MSM and in 1985 among IDU. These cohorts give insight in HIV rises in an early state in a specific population and are supportive for prevention activities to respond effectively to the ongoing HIV epidemic. From 1995 and 1998, special recruitment started among young (<30 years) MSM and IDU, respectively. However, since April 2006 participation is open again for MSM of all ages with at least one sexual partner in the preceding six months. The ACS, a collaboration between the Amsterdam Health Service, the Academic Medical Centre of the University of Amsterdam, the Sanquin Blood Supply Foundation and the University Medical Centre Utrecht, are part of the Netherlands HIV Monitoring Foundation and financially supported by the Netherlands Institute for Public Health and the Environment. [www.amsterdamcohortstudies.org].

1.6 National registration of HIV treatment centres

From January 2002, an anonymous HIV/AIDS reporting system for patients entering care was implemented in the Netherlands. Longitudinal data of all newly registered HIV infected individuals are collected by the HIV Monitoring Foundation (HMF, www.hiv-monitoring.nl). The goal of HMF is to monitor HIV infected individuals registered in the 25 recognised HIV treatment centres (including four children's centres) in the Netherlands to study changes in the epidemic, the natural history of HIV and the effects of treatment.

All HIV infected individuals registered in this cohort are followed prospectively from the time of reporting for care. HIV infected individuals in care, who were diagnosed prior to the start of HMF, were as far as possible included in the cohort retrospectively. HMF largely

follows the organisational structure that had been established for monitoring HIV in the ATHENA project, a clinical study following HIV infected individuals who are treated with HAART. The HIV cases diagnosed before 1996 only include persons who survived up to the start of the ATHENA project in 1996. The epidemiological data on newly reported HIV infections, as well as trends in new AIDS diagnoses after 2000, are reported in collaboration with the Centre for Infectious Disease Control at the RIVM.

Between 1987 and 2002, AIDS cases were reported on a voluntary basis to the Inspectorate of Health (national AIDS registry, IGZ). With the start of the HIV/AIDS monitoring system in 2002 by HMF, the national AIDS registry was ended. In this report, AIDS cases from 1999 or earlier are obtained from the AIDS registry. From 2000, AIDS cases from the HMF monitoring system were used. Data on deaths among HIV patients (including AIDS patients) were obtained through the HMF (≥ 2002 and previously from National Statistics Netherlands (www.cbs.nl) <2002).

1.7 Blood donors

Since 1985 blood donated by (new and regular) blood donors is screened for HIV, hepatitis B and C and syphilis and positive blood is not used for blood transfusion. Volunteers are checked according to quality and safety guidelines and people who report specific risk factors for blood transmitted infections are not accepted as donors. Records are kept in the national donor register, which provides good information on the prevalence and incidence of these infections in a low-risk population. Data are reported from 1998 onwards. Prevalence an incidence were calculated with the data provided by the bloodbank register (www.sanquin.nl).

1.8 Notification of hepatitis B and C

The compulsory notification of newly diagnosed acute hepatitis B and C virus (HBV and HCV) infections (since 1976) and chronic HBV infections (both since April 1999, but reporting of chronic HCV cases was stopped in 2005) includes epidemiological data on the occurrence of disease within specific risk groups. Since 2002, all public health services notify HBV and HCV cases by using the web based application Osiris.

1.9 Molecular epidemiology of acute HBV

In 2004, a study was initiated to evaluate the success of the HBV vaccination among high risk groups, in collaboration with the Municipal Health Services of Amsterdam and Rotterdam. Trends in HBV infections are studied and additionally blood samples are collected from all newly diagnosed acute HBV patients for genotypic analysis, to get more insight in the transmission networks within and between HBV risk groups in the Netherlands, and in the effectiveness of the vaccination campaign.

2 STI CLINIC ATTENDEES

2.1 Key points

- In 2007, 78,062 new consultations were registered in the national surveillance of STI centres.
- The number of consultations increased by 13% in 2007 compared with 2006.
- Characteristics of clinic attendees were as follows: young age (41% under 25 years old), Dutch origin (80%), MSM (28%) and commercial sex workers (9%), 13% had a history of STI and 50% was not previously tested for HIV.

2.2 STI consultations

In 2007, 78,062 new consultations (increase of 13% compared to 2006) were registered within the national surveillance of STI centres; 39,824 (51%) among men, 38,209 (49%) among women and 28 (0.0%) among transsexuals (Appendix table A.1). The STI centre in Amsterdam reported 34% of these consultations.

Of the attendees, 84% had both an STI examination and an HIV test, 15% only had an STI examination (tested for chlamydia, gonorrhoea, syphilis or hepatitis B) and 1% only an HIV test (Figure 2.1). Of the 15% not tested for HIV, 12% were known HIV positives.

Over the past years the number of consultations has risen continuously (Figure 2.2). In January 2006, the surveillance system changed from an STI sentinel surveillance network to a surveillance network of all STI centres in 8 regions in the Netherlands. In addition,

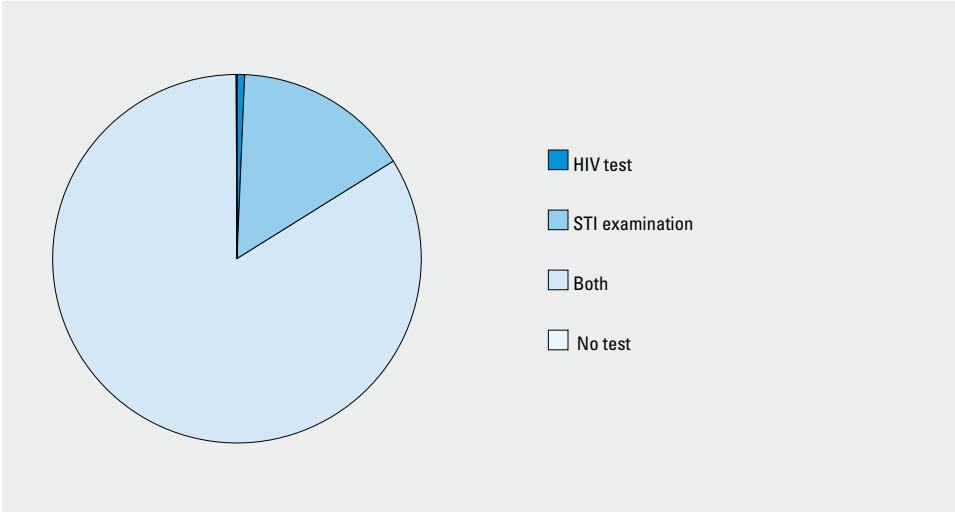
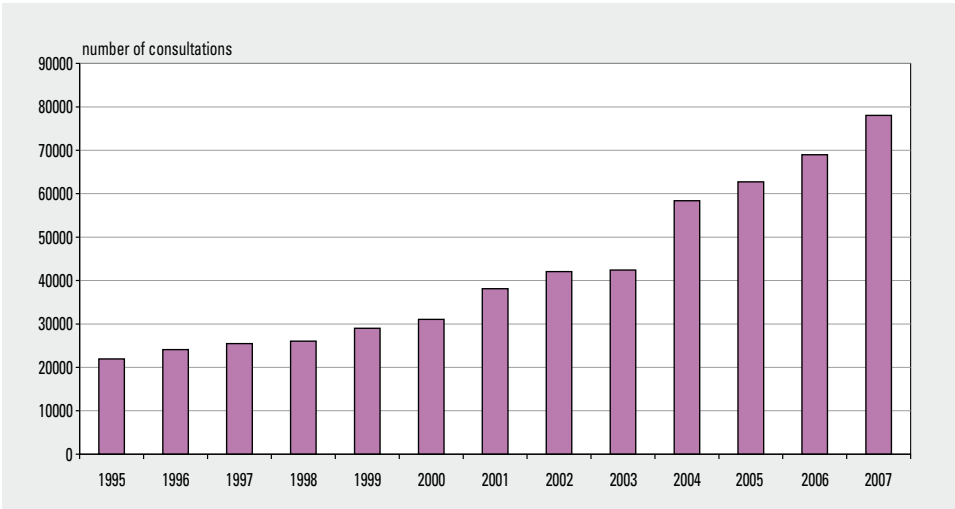


Figure 2.1: Distribution of consultations, national surveillance STI centres, the Netherlands, 2007



Footnote: 1995-2002: STI registration; 2000*: STI clinic of Erasmus Medical Centre Rotterdam was included; 2003: Implementation of STI sentinel surveillance network, 2004-2007: National STI surveillance network.

Figure 2.2: Number of consultations in the STI registration in the Netherlands, 1995-2007

the financing system for STI consultations has changed. This may slightly limit direct comparison of data with previous years (see chapter 1 on Methodology).

2.3 Characteristics of attendees

Of all male attendees, 28% (n=11,048) reported sex with men (Appendix table A.5) and of female attendees, 5% reported sex with women (n=1995). Eight percent of men (n=3,113) reported visiting a commercial sex worker (CSW) in the previous six months (Appendix table A.6) and 9% of women (n=3,395) worked as a CSW the past six months. Recent injecting drug use (past six months, variable not available –NA- from STI centre Amsterdam) was reported by 0.2% of the attendees (n=133), but these data were missing for 4% of the attendees (Appendix table A.7). Overall, 13% (n=6607) of the attendees (NA Amsterdam) reported a history of STI (gonorrhoea, syphilis or genital chlamydial infection); 13% of all men and 12% of all women.

The age distribution differed for men and women: among men the largest groups were those of 20-24 years and 25-29 years old (24% and 21% respectively) and among women 20-24 years (41%, followed by 25-29 years: 22%) (Appendix table A.3).

About 80% of the clinic attendees were of Dutch origin (2006: 81%); for women this was 81% and for men 79%. Other groups originated from Surinam (5%), sub-Saharan Africa (2%), Asia (2%), Eastern Europe (2%), other European countries (2%), the Netherlands Antilles (2%), Latin America (2%), Morocco and other North African countries (1%), Turkey (1%) and other (3%) (Appendix table A.4).

Of the attendees, 50% (n=38,832) were never tested for HIV antibodies before. Forty six percent (n=36,016) previously tested HIV negative (48% men, 45% women) and 1.9% (n=1,470) previously tested HIV positive (3.6% men, 0.1% women) (Appendix table A.8). Eighty five percent of the attendees who were never tested for HIV were tested on HIV in the current consultation.

Reasons for consultation

Due to changes in the registration system the 'reason for STI consultation' was reported only from January till June in 2007 (Table A.10a, NA Amsterdam). The most commonly reported reason for STI consultation in that period was risk behaviour (43% of all clients), followed by symptoms (27%) and a new sexual relationship or uncertainty (both 21%). Other reasons for consultations were anxiety or concern (13%), (periodic) screening (11%), notification by (ex)partner or social worker (9%), risk behaviour of partner and partner has symptoms (8%), HIV test (6%), hepatitis B vaccination (2%) or condom failure (2%).

Indication criteria for high risk

From July 2007, specific questions were included in SOAP about the criteria used to indicate whether the clinic attendee belongs to the targeted high risk group or not (Appendix table A.10b). The most commonly reported indication criteria were the preference to be tested anonymously (52%, NA Amsterdam) and three or more sex partners in the previous six months (45%, NA Amsterdam). The age criterion was applicable to 41% (younger than 25 years old) and this was higher for women than men (55% vs. 29%). Further frequently reported indications were partner belonging to a risk group (28% NA Amsterdam), having symptoms (22% NA Amsterdam), attendee originating from a STI/HIV endemic area (15% non-western ethnicity), and MSM (14%). In the second half of 2007, 6% of the visitors did not fulfil one of the inclusion criteria.

2.4 Behavioural surveillance in STI centres

The response rate to the optional behavioural questions ranged from 73% to 87% per question (NA Amsterdam and Utrecht). Twenty seven percent of the attendees used condoms in their last sexual encounter: 31% of men and 24% of women. Ten percent of men and 6% of women had sexual contacts abroad in the last 6 months. Most reported countries for men were Thailand, Germany and Spain and for women Turkey, Spain and Netherlands Antilles. Eight percent had an STI before, 9% of women and 8% of men (NA Amsterdam).

The median number of partners in the past six months was two for both men and women. The mean number of partners was 3.8, with a significant difference between heterosexual men (3.0 ± SD 4), women (3.7 ± SD 15) and MSM (6.9 ± SD 13); means are influenced by a small group of persons reporting very high partner rates, especially in women (CSW) and MSM. The proportion of persons reporting four or more partners in the last six months was 14% for women and 22% for heterosexual men, while this was 50% in MSM. Five percent of attendees indicated to be 'swinger' (= part of a couple involved in hetero- and bisexual contacts with other persons or couples); this proportion was similar in men and women.

3 BACTERIAL STI

3.1 Chlamydia and Lymphogranuloma venereum

3.1.1 Key points

- Genital chlamydia infection remained the most commonly diagnosed bacterial STI: 7,801 cases were seen in the national surveillance STI centres and 3,187 in the laboratory surveillance.
- The main burden of disease is carried by the young heterosexual population (53% under 25 years).
- After a gradual rise in the previous years, the chlamydia positivity rates decreased slightly, from 10,6% to 10,1% in heterosexual men and women from 2006 to 2007. In MSM it stabilised at the same high level (10,1%).
- Highest positivity rates were observed in teenage girls and boys (15-19 years), young heterosexual men (20-24 years) and adult MSM (30-39 years), as well as men and women from Surinam and the Netherlands Antilles.
- The number of chlamydia infections reported in anal and oral samples increased in women and MSM during the past four years.
- Chlamydia cases are more likely to be HIV-positive and to have co-infections with gonorrhoea and syphilis than persons testing negative for chlamydia.

3.1.2 Recent trends chlamydia

Genital chlamydia, a bacterial sexually transmitted infection caused by *Chlamydia trachomatis* (hereafter referred to as chlamydia), remained the most common diagnosis in STI centres in the Netherlands. In 2007, 7,801 genital chlamydia infections were diagnosed (3,908 in men and 3,893 in women) in the regional STI centres (Appendix table A.11a), representing 44% of all positive STI diagnoses. Chlamydia was tested in 99% of persons visiting the STI-centres; the overall positivity rate was 10%.

Gender, sexual preference and age group

Reported chlamydia cases are concentrated in the younger age groups in both sexes. The major part of chlamydia cases (53%) in 2007 was reported from the population under 25 years old (Appendix table A.12). Cases were equally divided over the sexes. In men, 28% of cases were reported in MSM and in women 4% in women who have sex with women (WSW, 5% of female attendees), hence homo- or bisexual preference does not increase the risk for chlamydia in men or women.

The positivity rate in women was 10.1% overall, higher among heterosexual women (10.4%) than among WSW (7.3%). In men, 10% of chlamydia-tests were positive, similar in heterosexual men and MSM (9.9% and 10.1%, respectively).

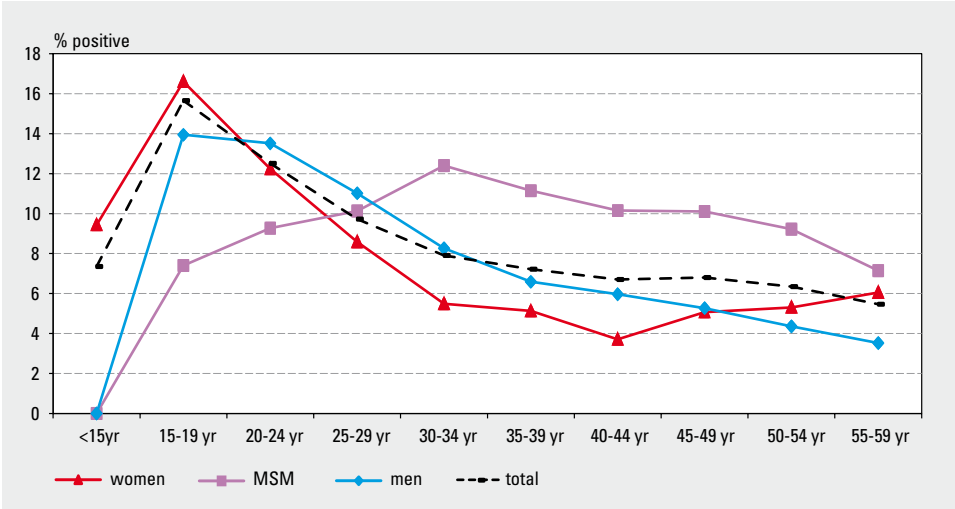


Figure 3.1: Positivity rate of chlamydia tests by gender/sexual preference and age-category, national surveillance STI centres, the Netherlands, 2007

The highest positivity rate was seen in teenage girls under 20 years old (17% in 15-19 years old). For heterosexual men the positivity rates were higher in teenagers as well as young adolescents, i.e. both under and over 20 years old (14% positivity in 15-24 years old). In older age groups, chlamydia rates were clearly higher in MSM than in heterosexual men and women (12% in 30-34 years old; see Figure 3.1)

Location of infection

Sampling for chlamydia tests from one or more locations is performed when deemed necessary by the consultant doctor or nurse. In women, 89% of positive diagnoses were found in urine/vaginal/cervical samples and 7% in anorectal. In heterosexual men, nearly 100% of positive results were in urine/urethral samples; in MSM, 59% were anorectal and 38% urine/urethral. Oral chlamydia infections were seen in 3.3% of female diagnoses, 0.4% of those in heterosexual men and 2.9% of diagnoses among MSM (Appendix table A.11b). Among MSM, 9% of persons with a chlamydia infection was infected at more than one location, whereas this proportion was 5% for women and 0.2% for heterosexual men.

Regional pattern

The eight regional centres of the national STI surveillance reported positivity rates in the range of 8.7% to 11.7% (Figure 3.2). The diagnoses were fairly unevenly distributed across the Netherlands (range: 320 to 3,082 cases reported per STI regional centre). Positivity rates tended to be higher in clinics located in highly urbanised areas in the western part of the country but also in the STI centres in the eastern part.

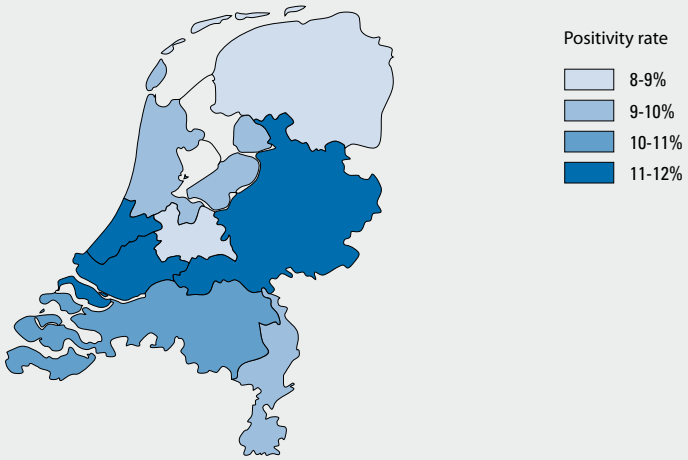


Figure 3.2: Positivity rates for genital chlamydial infection by STI region, the Netherlands, 2007

Trends in time

After three years of gradual increase, the chlamydia positivity rate now decreased significantly in heterosexual men and women ($p<0.001$), while it remained at a similar level in MSM. The absolute number of chlamydia cases diagnosed in the STI centres still increased with 9%. This rise in absolute numbers was lower in heterosexual men than in women and in MSM: 7% versus 10% and 15% and was due to the increased number of consultations and proportion tested for chlamydia (from 97.1% to 98.7%) rather than a rise in the proportion of positive diagnoses (see Figure 3.3).

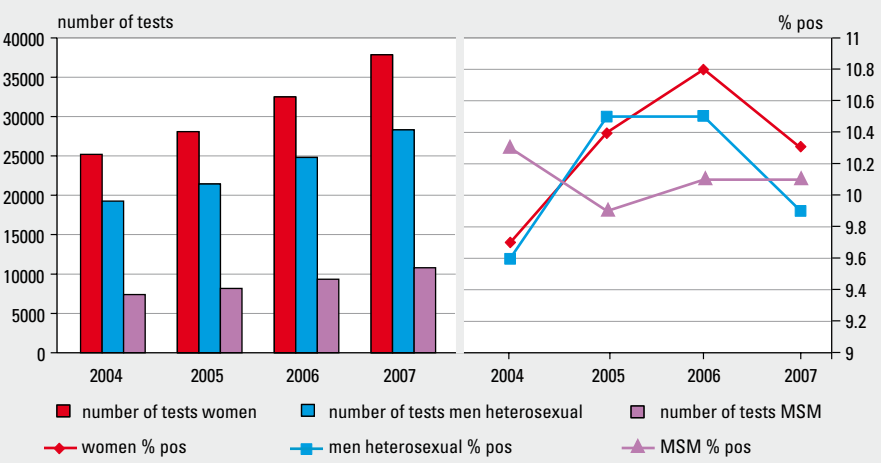


Figure 3.3: Total number and positivity rate of diagnoses of genital chlamydial infection by gender/sexual preference, national surveillance STI centres, the Netherlands, 2004-2007

The trends for the eight STI regions show that the chlamydia positivity rates increased from 2004 to 2007 in the more rural areas, i.e. Zeeland/Brabant, Oost, Limburg and also Utrecht, while regions with large cities, i.e. Zuidelijk Zuid-Holland, Noordelijk Zuid-Holland and Noord-Holland Flevoland did not show a clear increase, and neither did region Noord (Groningen). The 'urban centres' see more chlamydia cases, but the proportion seen in the 'rural centres' has increased from one fifth to one third in this 4-year period.

From 2004 to 2007, the proportion of chlamydia infections diagnosed from oral or anal samples increased for women and for MSM (from 6% to 11% in women and from 55% to 62% in MSM). This is probably influenced by increased sampling from these locations; data on the negatives or the total number of tests by location is incomplete (only available from 2006 and for Amsterdam from 2007).

Risk groups

STI clinic attendees of specific ethnic groups had more often a genital chlamydial infection than autochthonous Dutch. About 75% of the diagnoses in men were made in Dutch men and 81% in Dutch women; most diagnoses among non-Dutch were from persons originating from Surinam and the Netherlands Antilles/Aruba (14% in heterosexual men and 8% in women; Appendix table A.13). The positivity rate in heterosexual men was higher among these groups (16% and 19%) as compared to the rate in Dutch men (9%, $p<0.001$). In women the positivity rate was also higher among women from Surinam and the Netherlands Antilles/Aruba (14% and 16%, respectively) than in Dutch women (10%, $p<0.001$). Reported condom use at last sexual contact was lower for chlamydia positives compared to chlamydia negatives (21% vs. 28%, $p<0.001$).

Persons visiting the clinic indicating they were working as a commercial sex worker (CSW) or had visited a CSW in the past six months did not show a higher infection rate with chlamydia. Among men, 4.8% of the chlamydial infections were diagnosed in men who had recent contact with CSW (positivity rate 6.1% in 3,068 chlamydia tests in this group). In women 6.3% of the chlamydial infections were diagnosed in CSW (7.4% positive of 3,333 chlamydia tests in CSW, see also Appendix table A.15).

Co-infections

In 3% (n=260) of the cases of chlamydial infection the diagnosis was made in individuals who were HIV positive (known HIV infected, total n=837). Of the individuals diagnosed with chlamydial infection, 55% were never tested for HIV before (Appendix table A.17). Among chlamydia-cases 47 persons were found to have a new HIV-infection, which represents 16% of all new HIV-infections found in the STI surveillance system in 2007; the majority of them was MSM (43/47), age averaging 37 years.

Of the reported chlamydia cases 7% also had an infection with gonorrhoea and 1% had a syphilis co-infection. These cases encompass 29% of gonorrhoea and 14% of syphilis cases found in 2007. A history of gonorrhoea, infectious syphilis or chlamydial infection was reported by 15% of the individuals with genital chlamydial infection: 17% for men and 13% for women (Appendix table A.18). Co-infections of gonorrhoea and chlamydia were

more often seen in MSM (46% of cases), especially in the age-group 30-44 years and in women (31%), generally of younger age (16-24 years old).

3.1.3 Laboratory surveillance

Within the laboratory surveillance of the ISIS project, the diagnosis of genital chlamydial infection is defined as follows: culture positive or PCR positive or hybridisation test (including Genprobe) positive. All test results are counted only once per individual and an individual can only be counted as positive once in 60 days. The data presented here are from nine laboratories reporting data continuously for the period 2002 to 2007 and one additional laboratory which was connected from 2003. Together these laboratories covered nearly 5% of the Dutch population. Since 2007 the ISIS project in its original form is not supported any longer (a renewed project awaiting), but the laboratories still continued to report chlamydia accurately.

From 2002 to 2007, 196,138 tests to diagnose infection with *Chlamydia trachomatis* were carried out, of which 14,027 were positive (7.1%). The number of cases reported has increased yearly (Appendix table 3.1). In 2007, 3,187 positive cases were reported, with a positivity rate of 7.5%; in women the positivity rate was 6.2% and in men 10.5%.

Table 3.1: Number of tests and positive results for chlamydial infections reported from sentinel laboratories from 2002 to 2007 (Source: RIVM-ISIS)

	2002	2003	2004	2005	2006	2007
Number of tests	16,417	24,475	35,898	36,969	40,530	42,649
Positive test result	1081	1632	2362	2811	2954	3187
Percentage positive	6.6	6.7	6.6	7.6	7.3	7.5

*In 2003 one large laboratory was connected

The origin of the sample, i.e. the health provider/organisation requesting the laboratory for a test, is recorded in ISIS. The majority of patients were seen in the hospital, either inpatient or outpatient, at the GP (Appendix table 3.2) and some at Public Health Services (GGD) not connected to the STI surveillance system. The positivity rates vary according to the origin: higher in PHS and policlinic, followed by GP, low in hospitalized patients.

Table 3.2: Number of tests and positive results for chlamydia infections reported from laboratories for different patient venues in 2007 (Source: RIVM-ISIS)

	Hospital inpatient	Hospital outpatient	GP	PHS (GGD)	Total
Number of tests	6,771	10,108	18,933	4,366	4,2649
Positive test result	184	822	1633	376	3187
Percentage positive	2.7	8.1	8.6	8.6	7.5

The positivity rate in this population is higher among men than women (11% versus 6%, $p<0.001$), which is different from the national surveillance STI centres, but the cases show a similar age distribution as in the STI surveillance: the peak positivity for women

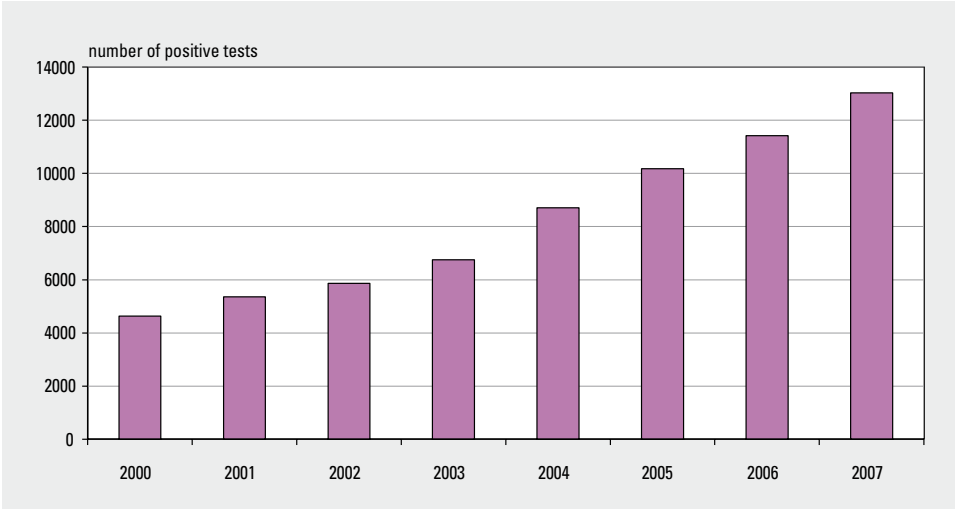


Figure 3.4: Number of positive test results for chlamydia trachomatis from 17 hospital- and regional laboratories, 2007 (Source: weekly virological reports, 2000-2007)

is at the age of 16-17 years and for men at 18-19 years. In the laboratory information on sexual preference is not available.

Data from the weekly virological reports, which report the total number of *Chlamydia trachomatis* positive tests, were analysed from 17 laboratories (consistently reporting since 2000, covering an estimated 40% of the cases [9]), show that the number of chlamydia cases found has increased yearly by about 15% during the last 8 years. There is overlap in the laboratories reporting in this system and the laboratories connected to the STI-centres.

3.1.4 Lymphogranuloma venereum

Lymphogranuloma venereum, LGV, is caused by specific subtypes of *Chlamydia trachomatis* (serovars L1, L2 and L3). In 2004 an outbreak occurred in the Netherlands among MSM who were predominantly HIV-positive. Since then, surveillance for LGV intensified.[10] In 2007, the acceptability of this enhanced LGV surveillance in 2004-2005 was evaluated. Information from enhanced LGV surveillance was available for 34 (33%) of 104 cases during that period. The enhanced LGV surveillance was generally regarded as adequate, but it was limited by the low completeness. Following this evaluation, the additional enhanced surveillance was discontinued and the routine STI surveillance now includes LGV diagnosis LGV cases continued to be detected after the outbreak, which justifies alertness for LGV in the STI surveillance in the Netherlands.[11]

During 2007, the number of cases of LGV stayed relatively high in comparison to the previous two years (see Figure 3.5). The total number of LGV cases reported in 2007 was 69. The majority of the cases (74%) were reported by the urban STI centre in Amsterdam. The patients showed a similar profile to that in the beginning of the outbreak.[12] All cases

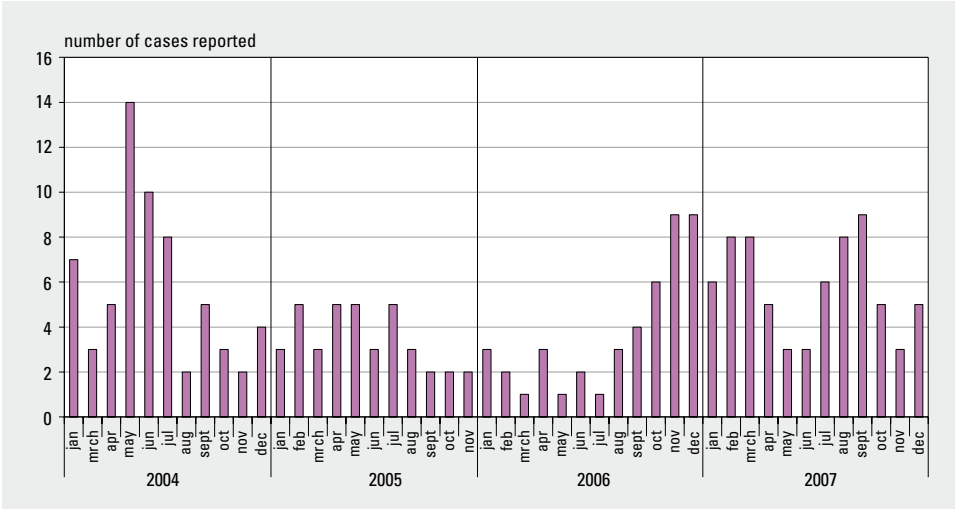


Figure 3.5: Number of cases of Lymphogranuloma venereum diagnosed per month in the STI surveillance system, the Netherlands, 2004-2007

were in MSM (except one unidentified), 67% were HIV positive, 77% were of Dutch origin and the mean age was 40 years (range 22-69). Concurrent STI were frequently diagnosed: 32% (22/69) had gonorrhoea, 10% had infectious syphilis. The LGV infections were all diagnosed in anorectal samples.

In March 2007 one LGV case was found in a 'swinger', a man with a steady female partner who had sex with other couples including also men. Although no similar cases have been reported so far, this incident showed that LGV could become a generalized infection if transmission into the heterosexual community occurs via this group of swingers.

3.1.5 Discussion

Chlamydia positivity rates decreased in 2007 for heterosexual men and women after a (gradual) increase in the last 5 years. In MSM the increasing trend stabilized in 2006. The prevalence of LGV remained high in 2007, since the renewed increase in cases since August 2006.

The main burden of chlamydia infection is carried by the young heterosexual population. Young adolescents under 20 years old in the STI centre most frequently tested positive for chlamydia. This pattern has been observed in recent prevalence studies as well.[13] The urban STI centres generally report higher numbers of chlamydia, but the positivity rate in more 'rural' centres is increasing towards the same level. Positivity rates remained higher in migrant groups of Surinam/The Netherlands Antilles. In the group of MSM at the STI centre, the 30+age groups seem to be more involved in the transmission of chlamydia. LGV transmission is restricted to this group exclusively.

The data from the laboratory surveillance showed somewhat lower positivity rates for ambulant patients in the hospital and from GP practices. The positivity among men seen in the GP practice is higher than among women. Women might be more regularly tested for check-ups (i.e. with (foreseen) pregnancy) and for control or out of concern, whereas men might come primarily when symptomatic. Preliminary data from the national surveillance of GP practices indicate that GP's are responsible for an estimated 100-150,000 STI related consultations per year (data Landelijk Informatie Netwerk Huisartsenzorg (LINH), in preparation) and reported increasing numbers of chlamydia especially in men.[14] More detailed data from the national GP surveillance will become available in 2008.

Genital chlamydia is the most commonly reported bacterial STI, despite the lack of symptoms in the vast majority of people infected (especially women). The possible consequences of untreated infection in women are of great concern. These include pelvic inflammatory disease (PID), which can lead to pelvic pain, ectopic pregnancy and infertility.[15, 16] Chlamydia infected attendees are more likely to have other concurrent STI and they are at a higher risk to get an HIV infection[17], as was also shown in the STI surveillance data presented here. It is necessary to reduce the burden of chlamydia, especially in the young heterosexual population. Systematic screening could be a way to timely diagnose both symptomatic and asymptomatic cases.[18] In 2008 a large scale population-based chlamydia screening intervention has started in Amsterdam, Rotterdam and part of south Limburg, which will continue until 2010. The Public Health Services invite all people from 16 to 29 years old to be tested for chlamydia. Testkits are delivered at home, communication is via the internet. Positive cases get a referral letter to see their GP for treatment. Depending on the effectiveness and the feasibility (evaluated by the RIVM), the intervention may thereafter be applied in other regions of the country.

In other European countries genital chlamydia infection is also the most commonly reported bacterial STI. Increasing trends have been observed since the mid-1990s. This is influenced by the increasing number of tests performed and the availability of improved tests. In the UK and Northern Ireland positivity rates have tripled since 1990, whereas in Sweden, Denmark and Norway the positivity rates have clearly increased since the mid-1990's.[19] Also in the US the incidence of chlamydia is high.[20]

In 2006, a *Chlamydia trachomatis* variant was reported from Sweden, with a specific mutation (base pair deletion) in the target area of several commercially available PCR tests to diagnose urogenital chlamydia infections, also those frequently used in the Netherlands. At the STI clinic in Amsterdam, a comparative study in 2006, involving several *C. trachomatis* PCR procedures found no cases of infections with the Swedish chlamydia variant among 515 visitors who tested positive for chlamydia.[21] Further comparative studies in 2007 did not detect the Swedish *C. trachomatis* variant in the Netherlands.[22], but in 2007 one case was reported from a Dutch person with a Swedish partner. PCR tests have been adjusted so the Swedish variant will be detected in routine surveillance. Continuing alertness is required to prevent the spread of a new mutated strain not detectable by available commercial tests.

3.2 Gonorrhoea

3.2.1 Key points

- In 2007, 1,827 diagnoses of gonorrhoea were made in the national surveillance of STI centres in the Netherlands (men: 77%, women: 23%).
- In women, two thirds of the cases were among attendees younger than 25 years.
- Most gonorrhoea cases were from the Netherlands followed by cases from Surinam, the Netherlands Antilles or Aruba.
- 964 diagnoses of gonorrhoea were made in MSM, accounting for 69% of cases in men.
- Double infections were found in 15% of all gonorrhoea cases, 2% had a triple infection.
- In a survey among public health laboratories, an increase of ciprofloxacin resistance was reported from 6.6% in 2002 to 38.0% in 2006.
- Results from the nationwide surveillance of gonococcal antimicrobial resistance (GRAS) showed a high prevalence of ciprofloxacin resistance in MSM (52%) and in heterosexuals from Eastern Europe (77%), and prevalence was low in heterosexuals from Surinam and the Netherlands Antilles (7%).

3.2.2 Recent trends gonorrhoea

In 2007, 1,827 diagnoses of gonorrhoea were reported (1,404 in men and 423 in women) in all STI centres (Appendix table A.11a), representing 10% of all STI diagnoses. Gonorrhoea was tested in 99% of all visitors of the STI centres, with an overall positivity rate of 2.4% (the percentage of positive tests to the total number of gonorrhoea tests).

Gender, sexual preference and age group

In women, most diagnoses were found among clinic attendees aged 20-24 (44%) and 15-19 (22%). In the older age groups the number of infections was lower. In men, most diagnoses were made in men aged 35-39 years (17%) and 40-44 (13%) (Appendix table A.12). Of all diagnoses in men, 69% (n=964) were MSM and 31% (n=438) heterosexual men (Appendix table A.14).

Positivity rates were much higher among MSM (8.9%) than among heterosexual men (1.5%) and women (1.1%). The highest positivity rate was found in MSM aged 25-29 years (11.1%). In heterosexual men, the highest percentages were found in the age groups 15-19 years and 50-54 years: 2.3% and 1.9% respectively. In women the highest percentages were found in the age groups <15 and 15-19 years, 5.7% and 1.9%, respectively (Appendix table A.19).

Location of infection

Samples for gonorrhoea include urethral/cervical by default as well as those taken from other locations when indicated (policy differs by STI centre). In women, most infections

were diagnosed urethral/cervical (67%). Anorectal infections and oral infections were found in 16% of the women. In heterosexual men, 98% of the infections were urethral and 2% oral. In MSM, anorectal infections were diagnosed most frequently (46%), followed by urethral infections (36%). Oral infections were diagnosed in 18% of the MSM (Appendix table A.11c).

Infections at more than one location were found frequently: 15% of all gonorrhoea cases were infected simultaneously on two locations and another 2% was infected on three locations (Table 3.3).

Table 3.3: Infections by location with gonorrhoea by gender and sexual preference, 2007.

	MSM	Heterosexual men	Women	Total
Urethr/cervical & anorectal	84 (8.7%)	0	43 (10.2%)	128 (7.0%)
Urethr/cervical & oral	47 (4.9%)	3 (0.7%)	34 (8.0%)	84 (4.6%)
Anorectal & oral	52 (5.4%)	0	4 (0.9%)	57 (3.1%)
Urethr/cervical & anorectal & oral	23 (2.4%)	0	16 (3.8%)	39 (2.1%)

Positivity rates per location differed per risk group. In women, positivity rate was highest in anorectal infections: 1.2%, followed by urethral/cervical and oral infections (both 0.9%). In heterosexual men the positivity rate for urethral infections was 1.5% and for oral infections 0.8%. For MSM the rate was highest for anorectal infections (6.7%), followed by urethral infections (4.0%) and oral infections (2.6%).

Regional pattern

The eight regional centres in the national STI surveillance reported positivity rates for gonorrhoea in the range of 0.9% to 3.0% (Figure 3.6).

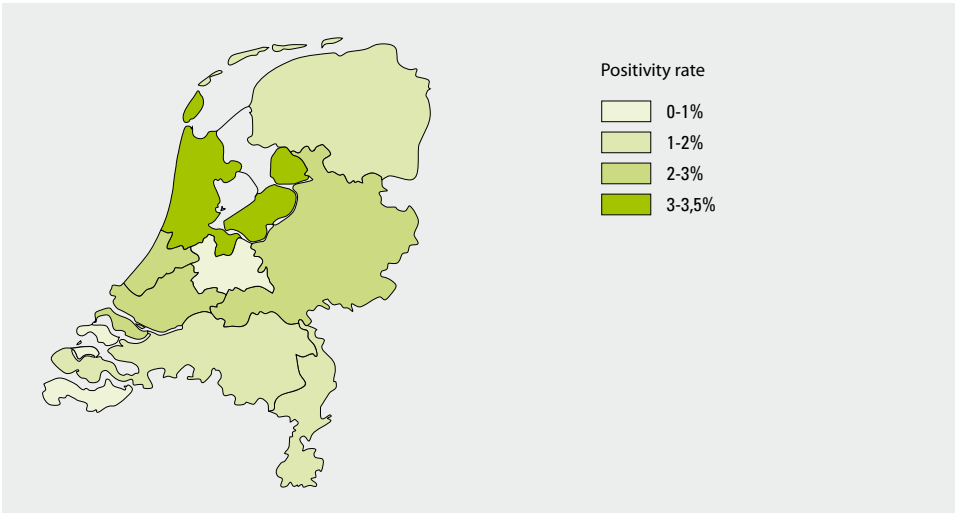


Figure 3.6: Positivity rates of gonorrhoea by STI centre, STI surveillance network, the Netherlands, 2007

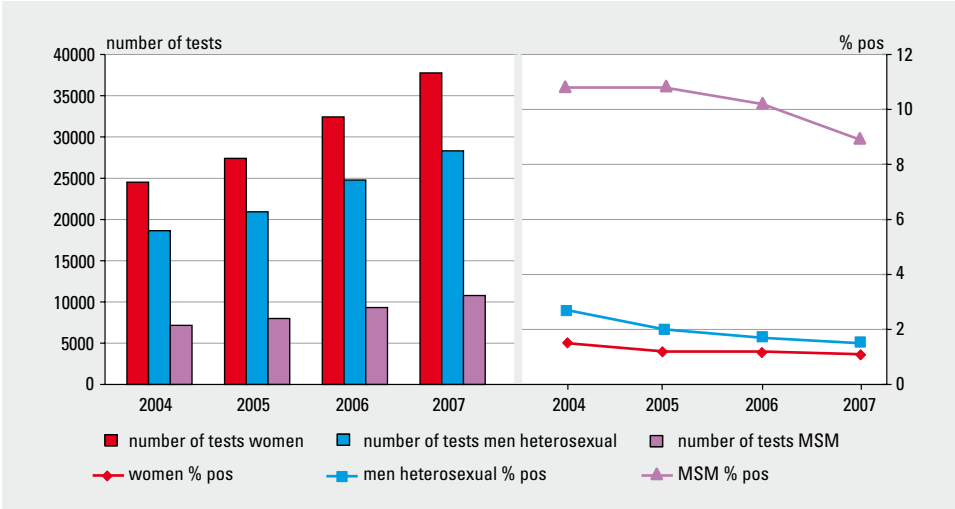


Figure 3.7: Number of gonorrhoea tests (left axis) and positivity rates (right axis) by gender/sexual preference, STI surveillance network, the Netherlands 2004 - 2007

Trends in time

The number of gonorrhoea tests increased with 39% from 2004 to 2007. However, positivity rates in women decreased from 1.5% in 2004 to 1.1% in 2007. In heterosexual men there was also a decrease: from 2.7% in 2004 to 1.5% in 2007. In MSM the positivity rate decreased from 10.8% in 2004 to 8.9% in 2007 (Figure 3.7).

Risk groups

About 68% of the diagnoses in men were made in Dutch men, 59% in Dutch women (Appendix table A.13). The mean positivity rate among Dutch cases was 1.9%. Among migrant populations, most diagnoses were made in cases from Surinam, the Netherlands Antilles and Aruba (13%, positivity rate 5.0%). Positivity rates were also high in cases from North Africa/Morocco (4.5%) and Eastern Europe (4.4%).

In men, 5% of the infections were diagnosed in patients who had recent (in the previous six months) contact with CSW, whereas for women 20% were diagnosed in CSW (Appendix table A.15). Positivity rate among CSW was 2.5% compared to 1.0% among non CSW ($p<0.001$). The positivity rate among heterosexual men who recently visited a CSW was 1.9% compared to 1.5% in heterosexual men not reporting CSW visits. In 14% (n=263) of the gonorrhoea cases the diagnosis was made in individuals who reported a prior positive HIV test (i.e. known HIV infected). Thirty-one percent of the individuals diagnosed with gonorrhoea were never tested for HIV before and 53% had a prior negative HIV test result (Appendix table A.17). The reported median number of partners was three for individuals diagnosed with gonorrhoea and three for gonorrhoea negatives ($p<0.001$). No differences were found between gonorrhoea positives and negatives in condom use during last sex contact. Gonorrhoea positives reported more often sexual contacts abroad than gonorrhoea negatives (11% vs. 8%, $p<0.05$). Most reported countries of contact were Thailand, Spain and Turkey.

Co-infections

Of the reported gonorrhoea cases, 29% also had an infection with chlamydia and 4% had a syphilis co-infection. Two percent of the cases had a new HIV infection. A history of gonorrhoea, infectious syphilis or genital chlamydial infection was reported by 36% of the men with gonorrhoea and by 25% of the women (Appendix table A.18, NA Amsterdam).

3.2.3 Antimicrobial resistance of gonococci in the Netherlands

Complete data on the number of diagnosis and results of antimicrobial susceptibility testing for 2002-2006 were provided by 23 laboratories. A remarkable increase in resistance to quinolones (recommended first line therapy until September 2003[2]) was observed: from 6.6% (2002) to 26.4% in 2005 [23], up to 38.0% in 2006 (Figure 3.8). Resistance to cephalosporins, current first line therapy, has not yet been confirmed. The results of 2007 were not yet available at the time of writing and are expected at the end of 2008.

Gonococcal resistance to antimicrobials surveillance

In June 2006, the Gonococcal Resistance to Antimicrobials Surveillance programme (GRAS) was implemented in the first STI clinic and at the end of 2007, GRAS was implemented in seven regional STI clinics (in 14 of 34 STI centres in the national surveillance). In participating STI clinics, positive isolates of gonorrhoea were cultured again to test antimicrobial susceptibility. In 2006-2007, a total of 1,119 isolates were tested (2006: 177, 2007: 942). Resistance to ciprofloxacin was 42%, resistance to tetracycline was 30% and penicillin resistance was found in 15% of all isolates tested. Resistance to cephalosporins was not found (Figure 3.9).

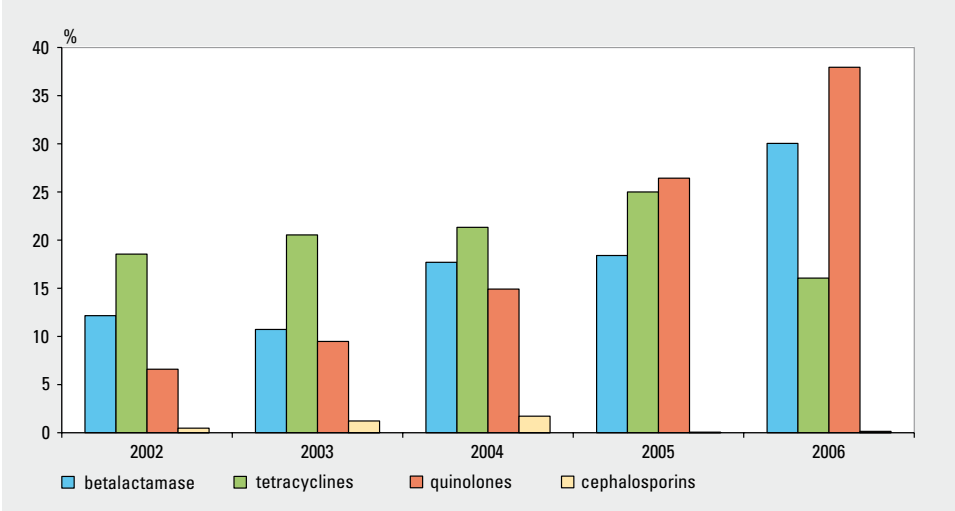


Figure 3.8: Gonococcal resistance in the Netherlands, proportion of resistant cases as reported by public health laboratories, 2002-2006

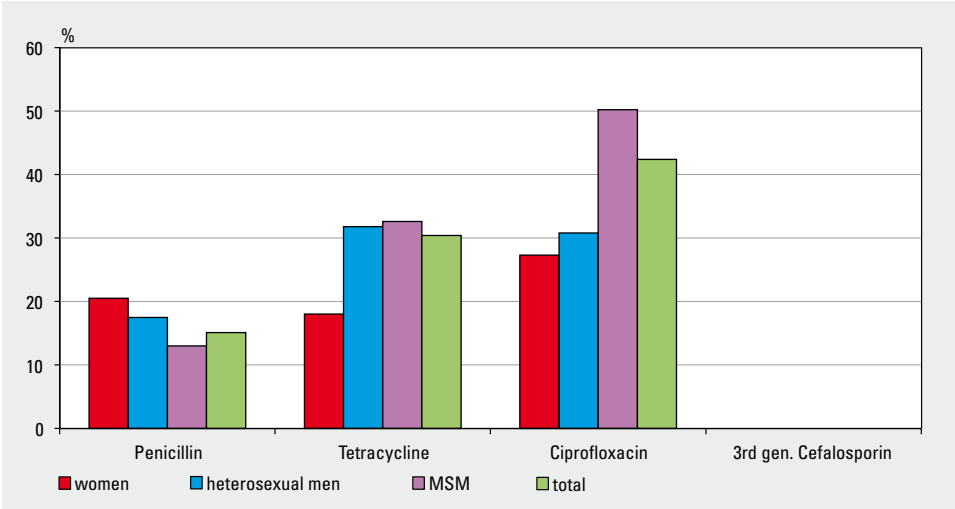


Figure 3.9: Prevalence of antimicrobial resistance to Neisseria gonorrhoeae, GRAS, the Netherlands 2006-2007

Ciprofloxacin resistance was higher in MSM (51%) compared to heterosexual men and women (30%, $p<0.05$). Ciprofloxacin resistance among heterosexuals differed with ethnicity and was highest in persons from Eastern Europe (77%, n=20). Among those, 56% reported commercial sex working in the last six months. Ciprofloxacin resistance was lowest in persons from Surinam and the Netherlands Antilles.

3.2.4 Discussion

Compared to genital chlamydial infection, gonorrhoea is an infection with a transmission pattern more concentrated among MSM and individuals with a history of STI. Positivity rates remained fairly stable since 2004 for heterosexual men and women, while in MSM there was a decrease from 11% in 2004 to 9% in 2007.

In 2006, the percentage of ciprofloxacin resistance in gonococci, as studied in a survey among public health laboratories, had further increased to 38%. Results from GRAS showed an overall prevalence of ciprofloxacin resistance of 42% in 2006-2007. The highest prevalence was found in MSM (52%) and in heterosexuals from Eastern Europe (77%) and resistance was low in persons from Surinam and the Netherlands Antilles. The increasing trend is consistent with recent data on gonococcal quinolone resistance from other European countries and indicates a potential European and worldwide public health problem.[3, 24-27] Therefore, guidelines have been changed and most countries do no longer recommend the use of fluoroquinolones for the treatment of gonococcal infections.[28-30] In 2007, high-level resistance to azithromycin was reported for the first time in the United Kingdom.[31] Azithromycin is a recommended therapy for chlamydial infections. It also has activity against *Neisseria gonorrhoeae,* but is not a recommended therapy. However, dual infections with both chlamydia and gonorrhoea are common and there is a possibility

that azithromycin is used in cases where only the chlamydial infection is diagnosed and the presence of gonococci is not recognized. Continuous monitoring of the emergence and spread of antibiotic resistance in *Neisseria gonorrhoeae* is needed to enable physicians and public health workers to evaluate prevention and control programs including treatment regimens. Therefore, gonococcal resistance will be included in the new ISIS-AR, a laboratory surveillance system which will replace the previous general ISIS, with a focus on monitoring of antimicrobial resistance.

3.3 Syphilis

3.3.1 Key points

- In 2007, 559 diagnoses of infectious syphilis were made in the national surveillance STI centres in the Netherlands (men: 92%, women: 8%).
- As in 2006, diagnoses of syphilis decreased further with 13% between 2006 and 2007. This is in contrast with the re-emerging of syphilis diagnoses from 2000 to 2004.
- Syphilis cases were concentrated in men who have sex with men.
- HIV and syphilis co-infections were frequently seen.

3.3.2 Recent trends syphilis, *Treponema pallidum*

Infectious syphilis includes the earlier stages of syphilis infection: primary (lues I) and secondary syphilis (lues II), and early latent (<1 year) stages or Lues latens recens. In 2007, 559 diagnoses of infectious syphilis were made in the regional STI centres (Appendix table 11a). Infectious or early syphilis represented 86% of all syphilis diagnoses (n=652) in 2007: 36% lues I (n=201), 31% lues II (n=175) and 33% lues latens recens (n=183), while late syphilis or lues latens tarda represented 10% (n=58) of the diagnoses (6% not specified). Of all visitors, 98% was tested for syphilis. The positivity rate was 0.9%.

Gender, sexual preference and age groups of infectious syphilis
Men accounted for 92% of all infectious cases in 2007. The distribution of cases of infectious syphilis was 1:12 in women versus men (42 versus 517 cases). The majority of cases were reported in MSM (463 cases, 90% of cases reported in men, and 83% of all cases). The

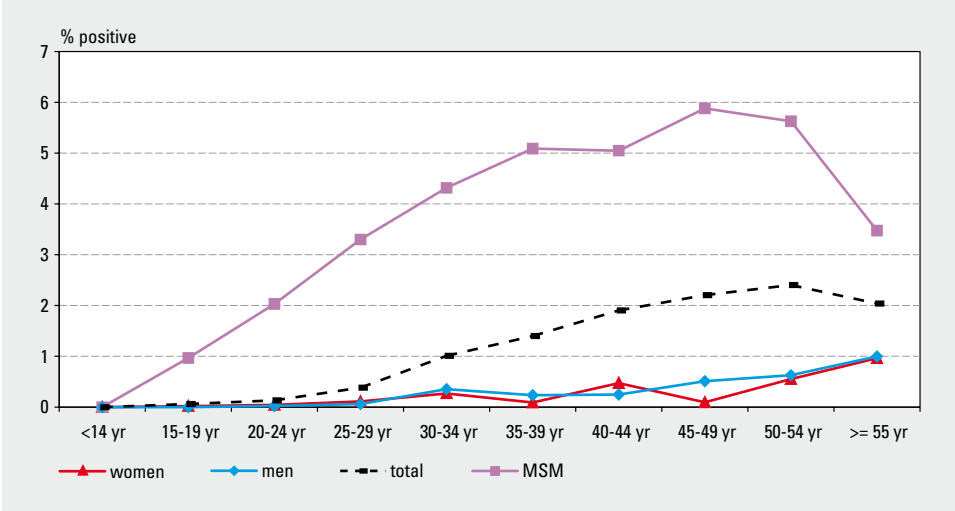


Figure 3.10: Positivity rate of infectious syphilis by age and gender/sexual preference, STI surveillance network, the Netherlands, 2007

positivity rate of infectious syphilis was much higher in MSM (4.3%) than in heterosexual men (0.2%) and women (0.1%).

The age distribution for infectious syphilis is rather different from that for other bacterial STI. In men 50% and in women 33% of the cases were seen in the group above 40 years old, although people in this age group are less frequent visitors of the STI centres. Syphilis positivity rates clearly increase with age (see Figure 3.10), although in MSM the rate decreases after the age of 55 years. The difference in positivity rate between heterosexual men and women and MSM is very obvious throughout the different age groups. The positivity rate among young heterosexuals (under 25 years) was very low; for persons in this age group without any other indication of high-risk (see Methodology 1.1), only one positive syphilis case was reported[32].

Regional pattern

The syphilis positivity rate by STI centre ranges from 0.3% to 1.3% (Figure 3.11).

Trends in time

In 2007, more STI clinic attendees were tested on syphilis than the previous years (Figure 3.12). However, the positivity rate decreased further in 2007, mainly due to a decrease in the cases seen in MSM. In heterosexuals the male to female ratio changed from 0.8 to 1 in 2000 till 1.4 to 1 in 2007.

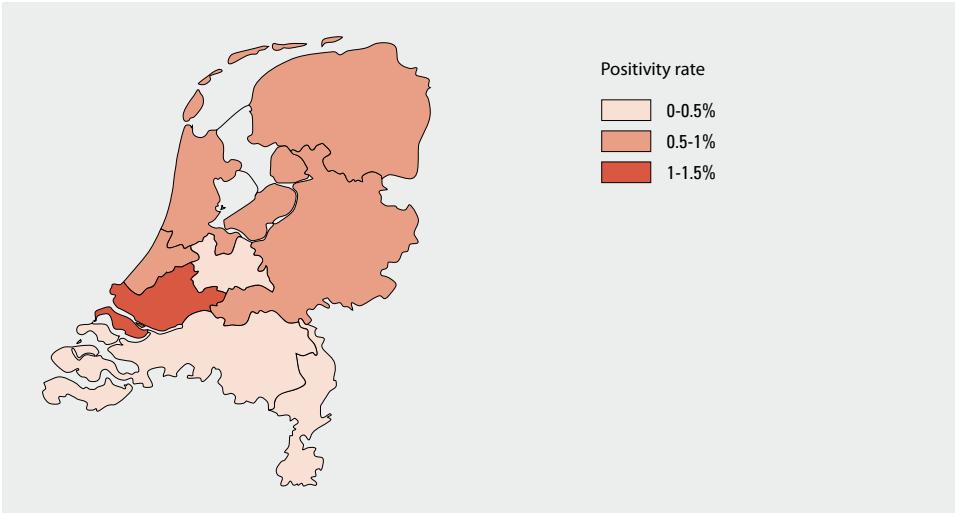


Figure 3.11: Positivity rates of infectious syphilis by region, national surveillance STI centres, the Netherlands, 2007

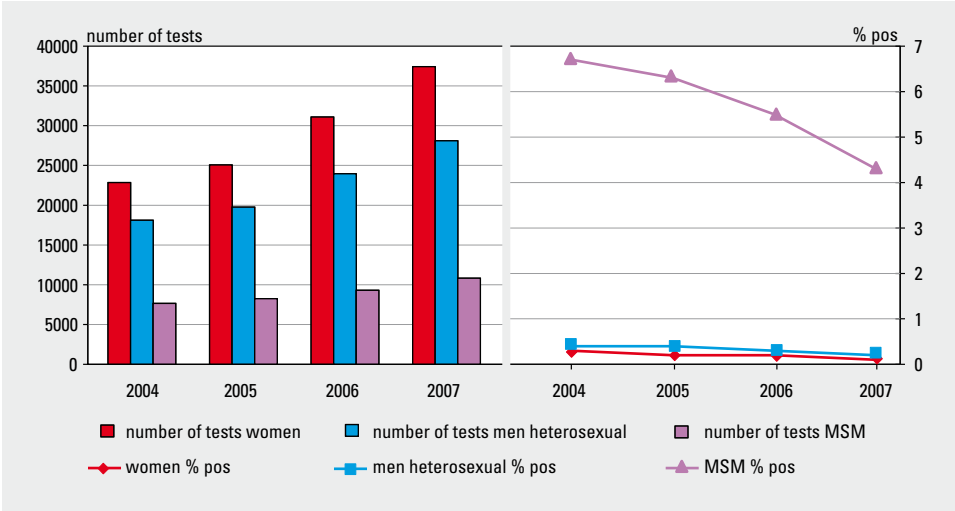


Figure 3.12: Number of syphilis tests by gender and sexual preference, STI surveillance network, the Netherlands 2004-2007

Syphilis screening of blood donors

In the Netherlands, blood donors are screened for syphilis. People who report specific risk factors for blood transmissible infections (such as HIV, HBV, HCV) are not accepted tot donate blood products. In 2007, in the total group of screened volunteers, 24 syphilis infections were found, 15 in regular donors and 9 in new donors. The overall incidence of syphilis among regular donors has increased from 2000 to 2005, decreased in 2006 and shows again an increase in 2007 (4.0 per 100,000 donor years, Figure 3.13)

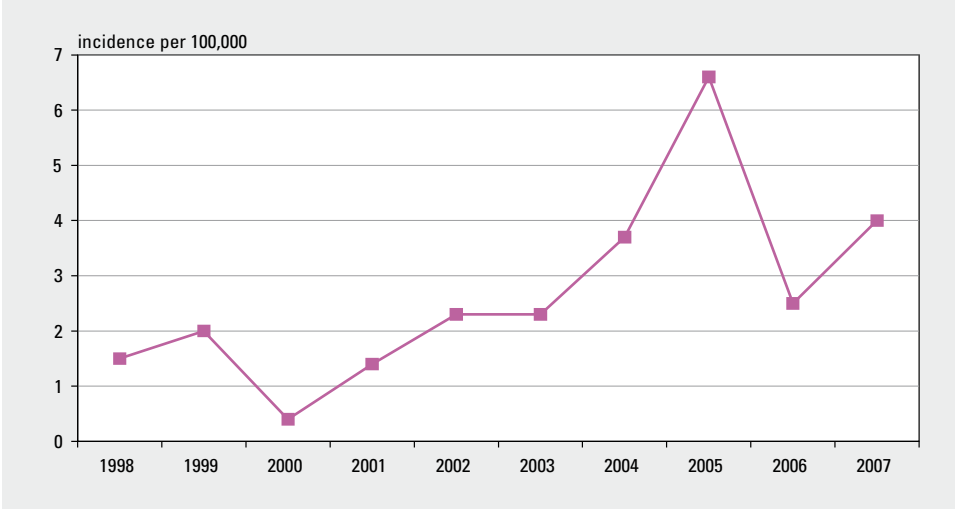


Figure 3.13: Syphilis incidence (per 100,000 donor years) among regular blood donors in the Netherlands

Risk groups
MSM have the highest burden of syphilis, with 83% of all cases being diagnosed in MSM. For women, 29% of the syphilis cases were diagnosed in CSW (Appendix table A.15b). In heterosexual men, 17% of the infections were diagnosed in men who had recent (past six months) contact with CSW.

In men, 75% of the syphilis cases were Dutch, in women 48% were Dutch (Appendix table A.13a-b). The positivity rate was higher among MSM from Morocco and Northern Africa (7.8%), from the Netherlands Antilles (7.0%) and from Surinam (6.4%), compared to Dutch MSM (4.0%). In heterosexuals, numbers are to small to conclude on ethnic risk groups.

Co-infections
Thirty seven percent of cases (n=210) diagnosed with infectious syphilis were HIV-positive. Of those, 173 (82%) were individuals who reported a prior positive HIV test (168 were MSM). The remaining 37, of whom 35 among MSM, were newly diagnosed HIV-infections, representing 12% of all new HIV-infections reported in the STI surveillance system in 2007.

Fourteen percent of syphilis cases were also diagnosed with chlamydia and 10% with gonorrhoea. A history of infectious syphilis, gonorrhoea or genital chlamydia infection was reported by 32% of the individuals diagnosed with syphilis: 34% for men and 10% for women (see Appendix table A.18a-b, NA Amsterdam).

3.3.3 Discussion

The previous rise of syphilis cases reported in the Netherlands seems to have attenuated further in 2007. Syphilis was tested in the major part of visitors in the STI centres; tests were found to be positive in 0.9% of the clinic attendees. Cases were concentrated in MSM, of whom one in three reported a prior HIV infection. Co-infections were often diagnosed among persons with infectious syphilis and one in three reported a history of STI. Positivity rates were higher in MSM from specific migrant groups. Apart from (older) MSM, the visitors at highest risk were CSW. The chance to be diagnosed with syphilis increased with age in all groups. The proportion of women diagnosed with infectious syphilis in the STI surveillance system was relatively low.

Notwithstanding decreasing positivity rates among heterosexual STI clinic attendees in the Netherlands, outbreaks of syphilis cases among heterosexuals have been reported in the last years.[33-36] However, the main (social) determinants for syphilis transmission in developed countries remain (1) men having sex with men and (2) low socioeconomic status.[37]

Next to routine testing for syphilis in the STI clinics, it may be worthwhile to concentrate further on case finding in specific risk-groups. The need to test routinely for syphilis in all young heterosexuals might need to be reconsidered. The STI clinic of Amsterdam and Rotterdam and the Schorer Foundation, have started an internet project in November 2007 to facilitate STI testing, focused on MSM (www.mantotman.nl). This projects aims at reducing the threshold for MSM to get tested for HIV and STI

4 VIRAL STI

4.1 HIV and AIDS

4.1.1 Key points

- In 2007, 306 individuals were newly diagnosed with HIV at the STI centres,
- 235 HIV infections were diagnosed in MSM, accounting for 90% of the cases in men.
- HIV positivity rates at STI centres in 2007 were 2.8 % (MSM), 0.1% (heterosexual men) and 0.1% (women).
- Of STI clinic attendees who were known HIV positive, 45% were diagnosed with a concurrent STI.
- In 2007, 864 newly diagnosed HIV patients were reported in the national registration of HIV treatment centres (source: HMF).
- The proportion of MSM accounting for new HIV cases reporting into care, increased the last four years, up to 65% in 2007. The proportion of heterosexuals decreased (2007: 28%).
- A cumulative total of 14019 HIV patients, 7,515 AIDS cases and 4,661 deaths among HIV patients in care were reported up to December 2007.

4.1.2 STI centres

Of all STI clinic attendees, 65,945 were tested on HIV antibodies. The proportion of STI clinic attendees that were tested on HIV has significantly increased from 56% in 2004 to 86% in 2007 ($p<0.0001$). Of all attendees, 50% had no prior HIV test (women: 53%, men: 47%). In 2007, 306 individuals were newly diagnosed with HIV (262 men and 44 women). Seventy-six percent (n=235) of all HIV infections were diagnosed among MSM. Among men, 52% were aged 25-39 years. Most diagnoses in women were made among women aged 20-34 years (59%) (Appendix table A.12b).

Of the new HIV diagnoses in men, 90% were seen in MSM (Appendix table A.14). Of all HIV infections in men, 68% were diagnosed in Dutch men, 5% in men from sub-Saharan Africa, and 7% in men from Surinam, the Netherlands Antilles and Aruba. In women, 18% were Dutch, 55% from sub-Saharan Africa and 16% in women from Surinam, the Netherlands Antilles and Aruba (Appendix table A.13).

Thirty-three percent (n=101) of all HIV infections were found among individuals who were never tested for HIV before, 62% had a prior negative HIV test. (Appendix table A.17). A history of STI (gonorrhoea, chlamydia or syphilis) was reported by 39% of the men with HIV and 13% of the women with HIV (Appendix table A.18, NA Amsterdam). Compared to 2006, the overall rate of positive HIV test results remained stable (2007: 1.7%, 2006: 1.6%).

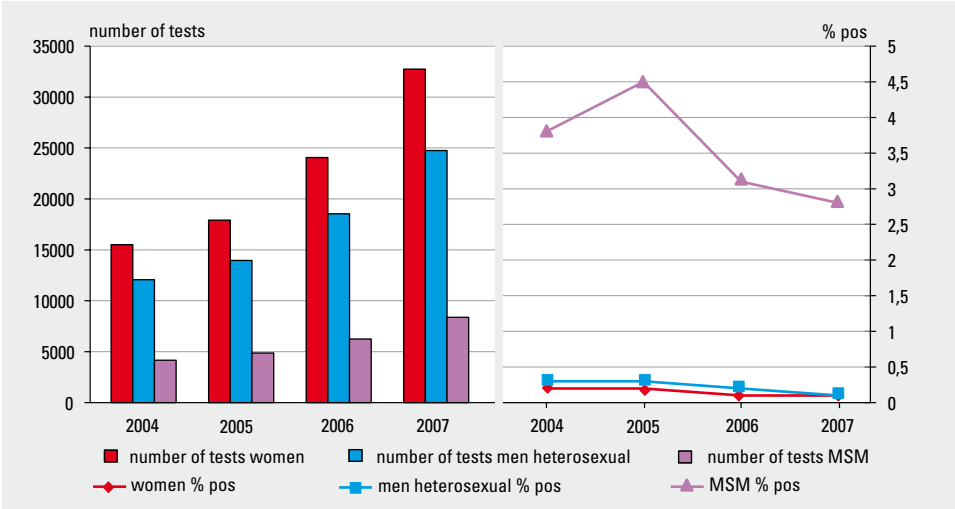


Figure 4.1: Number of HIV tests (left axis) and positivity rates (right axis) by gender/sexual preference, national STI surveillance network, the Netherlands, 2004 - 2007

HIV positivity rates were higher in MSM (2.8%) than in heterosexual men (0.1%) and women (0.1%). The highest rate was found in MSM aged 35-39 (4.1%; Appendix table A.19). The positivity rate in MSM decreased over time (2005: 5.0%, 2006: 3.1%, 2007 2.8%). In heterosexuals it did not change significantly over the last four years (Figure 4.1).

Among the STI clinic attendees, 1.9% had a prior positive HIV test (n=1,470); of whom 98% were men (n=1,441) and 2% women (n=29). Of the 11,048 MSM clinic attendees, 1384 (12.5%) were known HIV positive.

Concurrent STI

A concurrent STI was diagnosed in 45% of known HIV positive MSM, in 23% (n=12) of heterosexual male HIV positives and in 24% (n=7) of female HIV positives. In addition, in 101 of MSM clinic attendees a simultaneous new HIV-infection and a concurrent STI were diagnosed. Infectious syphilis, gonorrhoea and chlamydia were the most frequently diagnosed concurrent STI (see Table 4.1).

Table 4.1: Concurrent STI diagnosed in known HIV infected individuals in 2007 (% of total known HIV infected individuals, N=1465)*

Diagnosis	MSM (%) N=1384	Heterosexual men (%) N=52	Women (%) N=29	Total (%) N=1465
Gonorrhoea	258 (19)	4 (8)	1 (4)	263 (18)
Chlamydia	257 (19)	1 (2)	2 (7)	260 (18)
Infectious syphilis	168 (12)	4 (8)	0 (0)	172 (12)
Genital warts	77 (6)	2 (4)	2 (7)	81 (6)
Genital herpes	54 (4)	4 (8)	2 (7)	60 (4)
Concurrent STI**	622 (45%)	12 (23%)	7 (24%)	641 (43%)

* 5 clinic attendees did not report their sexual preference

** At least one concurrent STI diagnosed

Behavioural indicators among HIV positive
HIV positive STI clinic attendees reported a higher median number of partners compared to other attendees (3 versus 2, NS). They reported equal condom use at last sexual contact, 30% compared to others 29% (NS). Of them, 13% reported sexual contacts abroad in the previous three months and 17% reported a former STI.

4.1.3 Comparison between STI centres and other test sites

Table 4.2 shows trends in HIV positive test results obtained from surveys at STI clinics in Amsterdam and Rotterdam, the STI sentinel surveillance network and Checkpoint, a one-hour HIV testing facility in Amsterdam that started in 2002 and focuses on MSM [38] (www.hivnet.org).

Among MSM, HIV prevalence rates varied between 2.8-21.9%. HIV prevalence in the anonymous surveys was higher than that in regular HIV tests by name. Anonymous HIV surveys are done in Amsterdam and Rotterdam on all visitors, including people who are not tested during the regular consultation (because of opting-out or provider initiated if hiv positivity is known). Overall, these surveys showed a very high prevalence rate compared to the other data sources. However, this is due to the fact that a large proportion of those not tested in the regular consultations, is already known HIV-positive. If we limit this analysis to people with unknown HIV-status tested anonymously, the positivity rates are much lower: 1.9% in MSM and 0.4% in heterosexual men and 0% in women (Amsterdam) and 12.5% in MSM and 0% in heterosexual men and women (Rotterdam). Due to small numbers (e.g. in Rotterdam the number of MSM tested this way was 24, of whom 3 were positive) the anonymous data may not add much to what is already known from the regular surveillance.

In the anonymous surveys among MSM in Amsterdam, an increase of HIV prevalence was observed over time. The increase, however, is mainly caused by an increase in known HIV positive MSM attending the STI clinic: 93% of men in the anonymous survey knew their HIV status in 2007, compared to 80% in 2006, and 72% in 2004.[39]

The HIV positivity among MSM in regular tests decreased slightly. At Checkpoint, the HIV prevalence among MSM was 2.8% in 2007, which is comparable with the prevalence at the regular screening at the STI clinic in Amsterdam and Rotterdam (3.5% and 3.0%, respectively). HIV prevalence among heterosexual visitors of STI clinics and other test sites were stable and low over time.

Table 4.2: HIV prevalence among STI clinic attendees and other test sites [update anonieme screening a'dam komt volgende week]

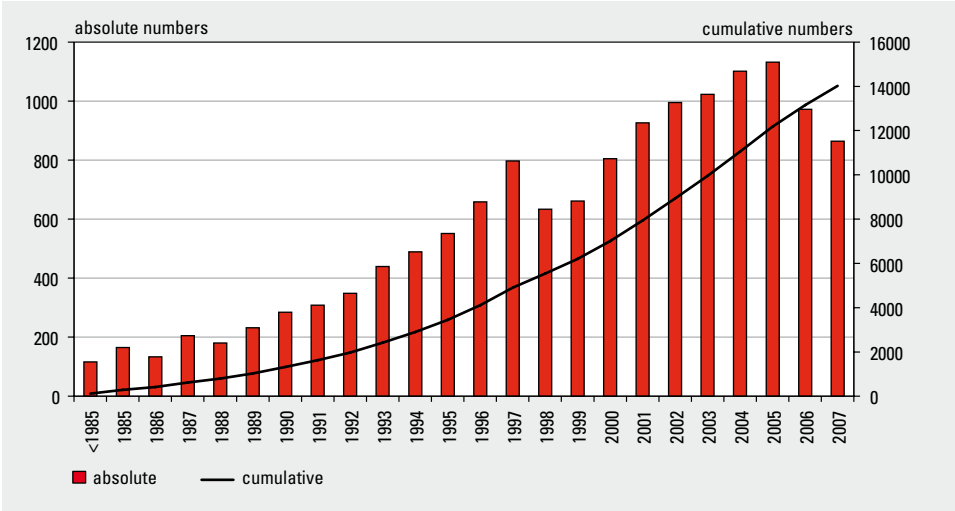
Region and source	2000	2001	2002	2003	2004	2005	2006	2007
MSM								
STI clinic Amsterdam								
- Regular	5.7%	4.7%	3.8%	4.2%	5.7%	6.0%	4.0%	3.5%
- Anonymous*	16.9%	14.6%	20.3%	20.1%	18.8%#	19.4%	21.5%	21.9%
STI clinic Rotterdam								
- Regular	1.6%	2.9%	6.2 %	1.7%	4.5%	6.3%	3.6%	3.0%
- Anonymous*	10.8%	12.0%	13.4 %	22.4 %	32.1%	25.7%	38.5%	58.4%
STI (sentinel) surveillance network	-	-	-	3.3%	4.2%	5.0%	3.1%	2.8%
Checkpoint	-	-	6.8%	4.8%	4.6%	5.7%	6.5%	2.8%
Heterosexual risk groups								
STI clinic Amsterdam								
- Regular, men	0.3%	0.6%	0.5%	0.3%	0.2%	0.3%	0.3%	0.2%
- Anonymous, men*	0.9%	0.4%	0.4%	1.0%	0.5%#	0.0%	0.4%	
- Regular, women	0.2%	0.3%	0.4%	0.3%	0.3%	0.4%	0.2%	0.3%
- Anonymous, women*	0.6%	0.3%	0.8%	0.5%	0.2%#	0.4%	0.4%	
STI clinic Rotterdam								
- Regular, men	0.7%	0.4%	0.3%	0.5%	1.0%	0.3%	0.2%	0.1%
- Anonymous, men*	0.2%	0.8%	0.5%	1.0%	0.9%	0.4%	0.5%	0.6%
- Regular, women	0.2%	0.4%	0.3%	0.3%	0.3%	0.2%	0.2%	0.1%
- Anonymous, women*	0.3%	0.8%	0.9%	1.0%	0.7%	0.5%	0.2%	2.8%
STI (sentinel) surveillance network								
- Men	-	-	-	0.3%	0.3%	0.3%	0.2%	0.1%
- Women	-	-	-	0.3%	0.2%	0.2%	0.1%	0.1%
Checkpoint								
- Men	-	-	0.8%	0.3%	0.4%	0.7%	1.2%	0.0%
- Women	-	-	1.1%	1.0%	0.5%	0.0%	0.0%	1.0%

* Known HIV infected included, # based on 1 research period

4.1.4 HIV treatment centres

By the end of 2007, a cumulative total of 14,019 HIV patients with a known year of diagnosis had been registered by HIV treatment centres in the national database of the HIV Monitoring Foundation (HMF) [www.hiv-monitoring.nl]. For 162 other cases the year of diagnosis was unknown (excluded from the analysis). (Figure 4.2)

In the registration, so far 864 new cases of HIV diagnosed in 2007 are included, but it is expected that more people will still be included with an initial diagnosis in 2007. Of all registered cases, 10,897 (78%) were men and 3,122 (22%) were women. Of all individuals, 98.8% were infected with HIV-1, 0.6% with HIV-2 and 0.6% with HIV-1 and HIV-2.



Footnote: only HIV patients with a known date of diagnosis are included (ATHENA: 1996-2001, national registration from 2002 to date

Figure 4.2: Number of HIV cases (right axis: cumulative), by year of HIV diagnosis

New registered HIV diagnoses in care in 2007

Of the 864 new HIV cases reported in 2007 in the national registration of HIV treatment centres, 711 (82%) were male and 153 (18%) were female. Of the new cases, 93% were infected sexually: 28% through heterosexual contact and 65% through MSM. Of all men, 79% acquired the infection through sex with men. Of all women, 92% acquired the infection through heterosexual contact. Of all heterosexual cases, 57% were female.

Injecting drug use accounted for 0.6% (n=5) of the new diagnoses and risk through blood (products) for 0.2% (n=2). For 6%, the transmission route was undetermined (Appendix table B.12).

Of the cases, 64% came from the Netherlands, 14% from sub-Saharan Africa, 10% from Latin America and the Caribbean (Appendix table B.13). The median age at diagnosis in 2007 was 39 years and differed per risk group: the median age in MSM was 39 years, in heterosexuals 38 years and in IDUs 47 years (Appendix table B.16). Eight cases (1%) were identified among young people (0-19 years).

Focus on risk groups in all registered HIV cases in care

From 2004, the annual number of new HIV diagnoses among MSM in the national HIV registry increased up to 579 in 2006. In 2007, 561 HIV diagnoses among MSM were recorded, but this number may further increase due to the reporting delay. The total number of registered HIV diagnoses among heterosexual men increased slightly between 2000 and 2005. The number of heterosexual HIV infected women decreased after 2002 (2007 still incomplete).

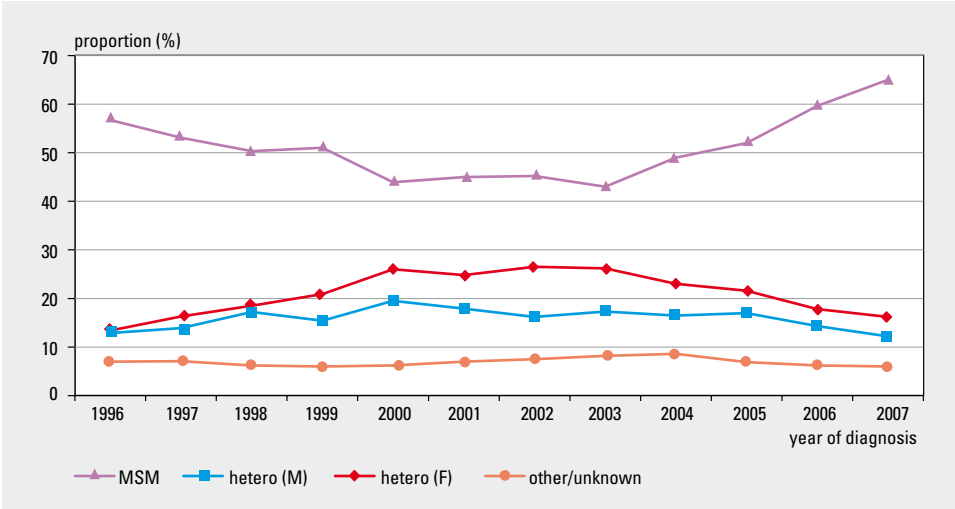


Figure 4.3: Proportion of annual HIV cases in care per transmission risk group, by year of diagnosis, 1996-2007 (Source: HMF)

Less than 5% of the total HIV infections were among IDUs. Mother-to-child transmission and transmission through blood (products) both accounted for 1% of the all registered infections (Appendix table B.2). In 7% of the HIV diagnoses the transmission risk group was unknown.

The relative contribution of each risk group to the annual number of diagnoses changed over time (Figure 4.3). The proportion of MSM declined from 57% of the new diagnoses in 1996 to 45% in 2001-2003, and increased thereafter to 65% in 2007. The proportion of heterosexuals increased from 25% in 1996 to 44% in 2000-2003, and declined again to 28% in 2007 ($p < 0.0001$).

Young people

Of all registered HIV cases, 192 were children between 0-14 years at diagnosis (1%), 358 (3%) were teenagers between 15-19 years at diagnosis, 1,265 (9%) were young adults (20-24 years) and 2,305 (16%) were individuals aged 25-29 years at diagnosis (Appendix table B.5).

Fifty-eight percent of the children <15 years were Dutch and 30% were from sub-Saharan Africa. Of teenagers aged 15-19, 54% were from sub-Saharan Africa and 22% from the Netherlands. Young adults (20-29 years) were from the Netherlands (39%), sub-Saharan Africa (29%) and Latin America/Caribbean (14%).

Men who have sex with men

The majority of HIV infected MSM was Dutch (73%) (Appendix table B.4). The absolute number of Dutch MSM increased after 1999 from 235 to 438 in 2007. The number of MSM from other countries remained fairly stable over time (Figure 4.4). For 73% of the MSM, the country of infection was known. The majority of the MSM (89%) were infected in the Netherlands; 96% among Dutch MSM and 61% among non-Dutch.

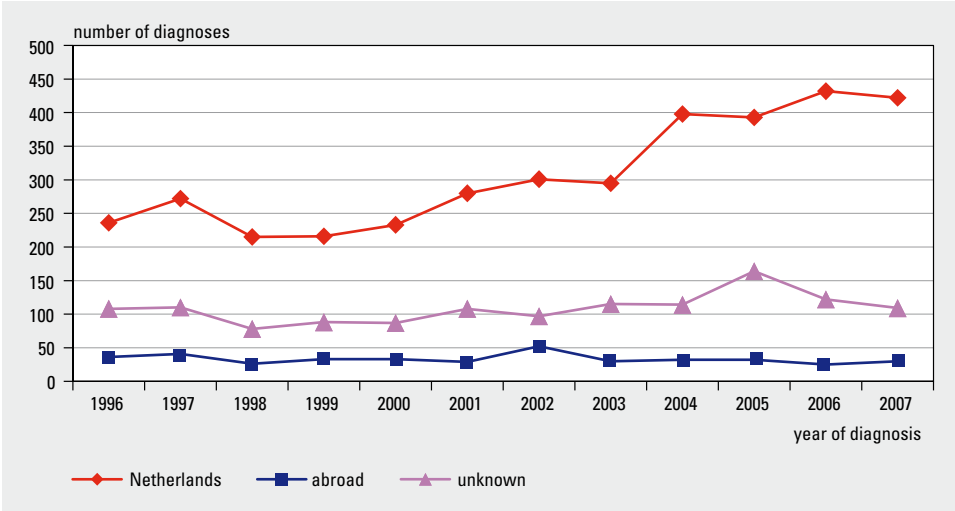


Figure 4.4: Reported country of infection of MSM, by year of diagnosis, 1996-2007 (Source:HMF)

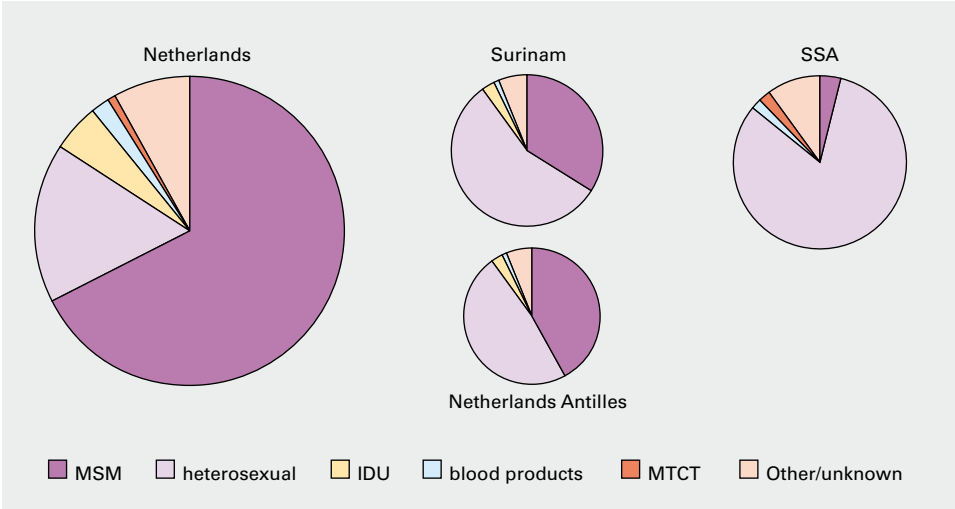
MSM were, on average, younger at HIV diagnosis than heterosexual men. Over time, age at HIV diagnosis has increased considerably. For Dutch MSM, the age increased from 32 in 1987 to 39 years in 2007. For non-Dutch MSM, the age increased from 28 in 1987 to 37 in 2007 (Appendix figure B.3).

Migrant populations

Of all registered HIV patients, 44% were born abroad. The majority (40%) of the migrants originated from sub-Saharan Africa, 25% from Latin America/Caribbean, 15% from Western Europe and 7% from South (East) Asia. Figure 4.5 shows the distribution of transmission risk groups among HIV patients for different regions of origin. The largest risk group among the Dutch population was MSM (69%), while MSM only accounted for 4% of the infections among sub-Saharan Africans (SSA). The proportions of MSM among individuals from Surinam and the Netherlands Antilles were 34% and 39%, respectively.

Eighty-eight percent of the individuals from sub-Saharan Africa, for whom the country of infection is known (69%), were infected in SSA. Among Surinamese individuals (country of infection known: 61%), only 22% were infected in Surinam and 76% in the Netherlands. Twenty nine percent of the individuals from the Netherlands Antilles/Aruba were infected in their region of origin. Most people from Turkey and Morocco reported to be infected in the Netherlands.

For HIV patients from Surinam or the Netherlands Antilles, the country of infection differed between risk groups: MSM from Surinam or the Antilles and heterosexuals from Surinam more often acquired the infection in the Netherlands; whereas heterosexuals from the Antilles and Aruba more often became infected in the country of origin.



Footnote MTCT: mother to child transmission; IDU: injecting drug use; MSM: men having sex with men

Figure 4.5: HIV infected individuals, by transmission risk group and region of origin, hiv-register 2007 (Source: HMF)

Age at diagnosis

Among heterosexual women, African women were the youngest at diagnosis (median age: 29.2 years). Dutch and West European women were the oldest: 33 years. Among heterosexual men, Asian men were the oldest (41 years), and African the youngest (34 years).

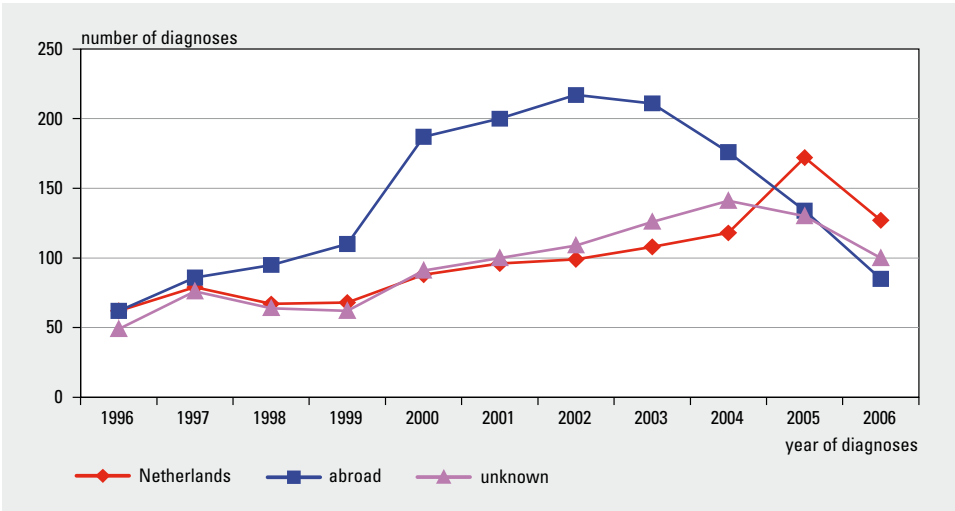


Figure 4.6: Reported country of infection of heterosexuals, by year of diagnosis, HIV register 2006 (Source: HMF)

* 2007 data still incomplete

The median age at diagnosis showed a slightly increasing trend over time for heterosexuals from sub-Saharan Africa, Latin America/Caribbean and the Netherlands (Appendix figure B.2). Heterosexuals of African origin are the youngest at HIV diagnosis (33 years). Heterosexuals from Latin America or the Caribbean who were diagnosed in 2007 had a median age of 43 years and were slightly older than the Dutch heterosexuals (41 years). The median age of MSM clearly increased over time, from 32 years in 1987 to 40 years in 2007 for Dutch men and from 28 years to 37 years in 2007 for non-Dutch MSM (Appendix figure B.3).

Geographical differences

Forty two percent of all HIV infected individuals were seen in treatment centres in Amsterdam (Table B.1). Prevalence of HIV infections per 100,000 inhabitants in 2007 are shown for each province in Figure 4.7. The province of 'Noord-Holland' has the highest HIV prevalence (12.6/100000), followed by the provinces Utrecht (6.8/100000), Groningen (6.4/100000) and 'Zuid-Holland' (5.1/100000). The number of new HIV diagnoses in Amsterdam remained fairly stable between 340 and 390 per year in the past eight years. The number of HIV diagnoses outside Amsterdam increased between 2000 and 2005 (in particular in Utrecht and Rotterdam) but seems to have levelled off in 2006 and 2007.

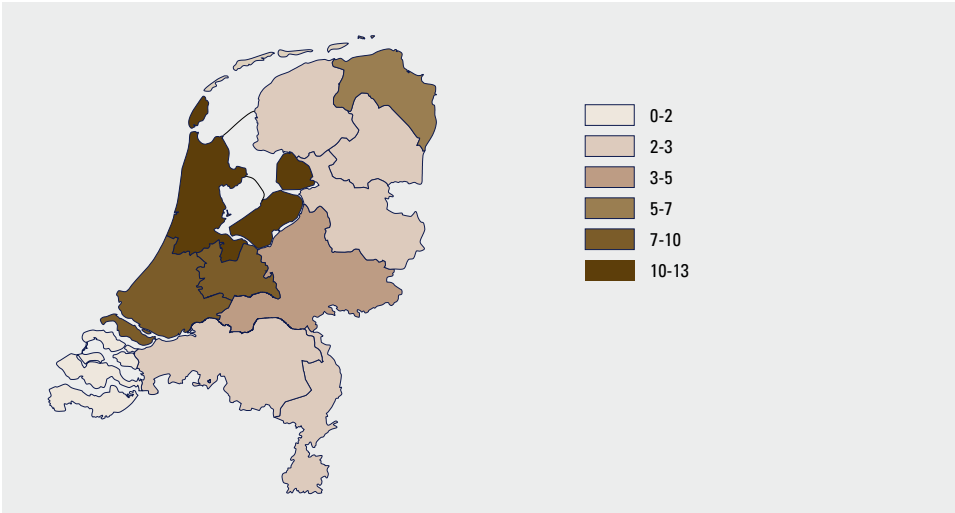


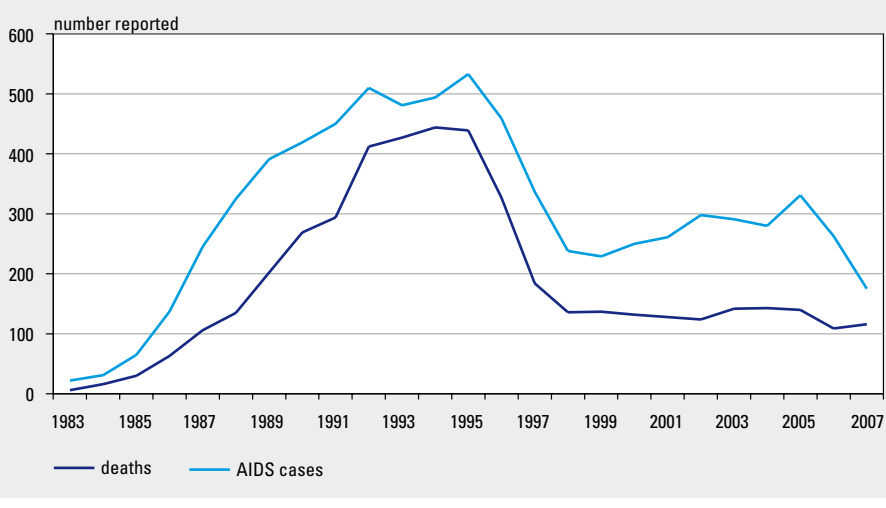
Figure 4.7: Number of new HIV diagnoses in 2007 per 100,000 inhabitants; calculations based on HIV infections recorded in the various HIV treatment centres in each province (Source: HMF)

4.1.5 AIDS cases and deaths among HIV patients

By the end of 2007, a cumulative total of 7515 AIDS cases was registered in the Netherlands (Appendix table B.18-19). The number of new AIDS cases peaked in 1995, and declined sharply over the subsequent four years, as the result of the introduction of HAART. Since 1999, the rate of decline had slowed and decreased even further after 2005.

The proportion of MSM among reported AIDS cases increased from 39% in 2004 to 50% in 2007. Conversely, the proportion of AIDS cases among heterosexuals decreased from 39% in 2004 to 37% in 2007. The median age at AIDS diagnosis in 2007 was 43 years; men were older than women, respectively 43 and 37 years. On average, Dutch individuals were older at AIDS diagnosis than individuals of African origin: 44 and 37 years (Appendix table B.20).

The number of deaths among HIV patients showed a similar trend. Between 1983 and 2007, a cumulative total of 4,661 HIV infected individuals were known to have died of which 116 died in 2007. HAART had a major effect on the number of deaths and, as a consequence, the number of people living with HIV increased. The registered number of HIV- patients alive is over 12,500.



Footnoe: the low value in 1999 is caused by the change in data sources of AIDS cases (sources AIDS cases: AIDS registration Health Inspectorate <1999, HMF ≥1999. Sources deaths: CBS <2002, HMF ≥2002)

Figure 4.8: Number of AIDS cases and deaths among HIV patients (Source:HMF)

4.1.6 Nationwide HIV screening

Blood donors

In the Netherlands, blood donors are screened for HIV antibodies since 1985. People who report specific risk factors for blood transmissible infections (such as HIV, HBV and HCV) are not accepted. In 2007, in the total group of screened volunteers, six HIV infections were found, three in repeat donors and three in new donors. The overall prevalence among new donors increased to 11.0 per 100,000 donors, the incidence among regular donors remained low: 1.0 per 100,000 donor years (Figure 4.9 and Figure 4.10).

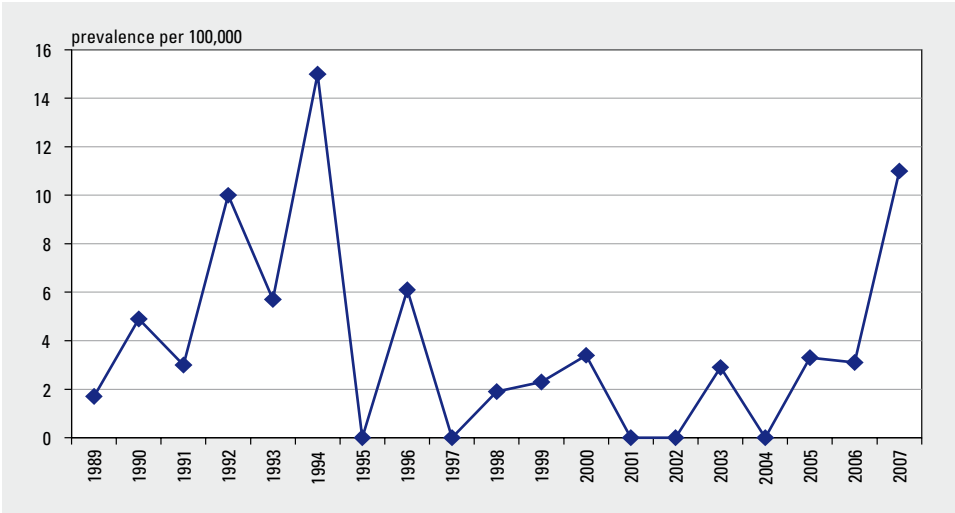


Figure 4.9: HIV prevalence (per 100,000 donors) among new blood donors in the Netherlands (Source: Stichting Sanquin Bloedvoorziening, Amsterdam)

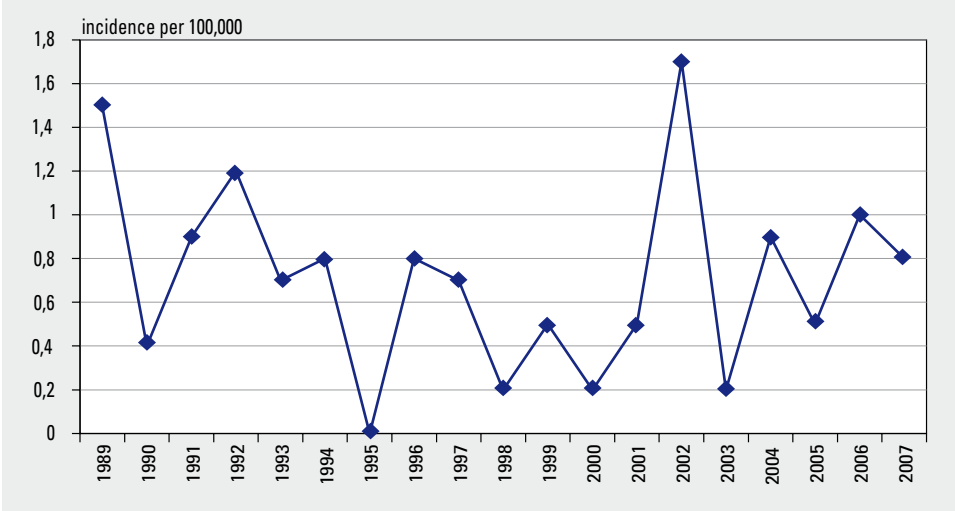


Figure 4.10: HIV incidence (per 100,000 donor years) among regular blood donors in the Netherlands (Source Stichting Sanquin Bloedvoorziening, Amsterdam)

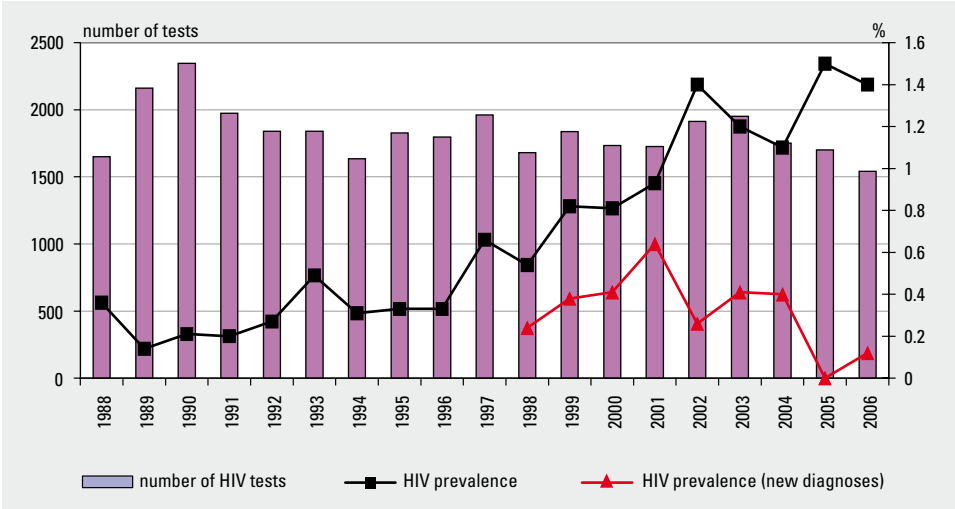


Figure 4.11: HIV prevalence (%) and number of tests among pregnant women in Amsterdam (sentinel study)

Pregnant women

In 2006, 14385 women were offered an HIV test in Amsterdam (4 persons refused). The total HIV prevalence was 0.17% (24/14381). Of these 24 women, 21 knew their HIV positive status and 22 had a non-Dutch origin (15 sub-Saharan Africa, 5 Surinam/Antilles, and 1 Belgium).[40] At the time of writing, data of 2007 were not available yet.

Since 1988, pregnant women in Amsterdam are tested for HIV in a sentinel surveillance study.[40] Until 2002, HIV prevalence was slightly increasing; the last few years mainly due to an increase of known HIV positive women becoming pregnant (Figure 4.11). In 2006 HIV prevalence in this sentinel surveillance was 1.4% (22/1,541) which is comparable to 2005 (1.5% 26/1,701).

4.1.7 HIV incidence in the Amsterdam Cohort Studies (ACS)

MSM

The HIV incidence among MSM in the ACS in 2007 was estimated at 1.22 per 100 person-years (PY). The last decade, the HIV incidence is relatively stable in the range of 0-2 per 100 PY, see Figure 4.12 (www.amsterdamcohortstudies.org).

Drug users

The first enrolment of IDUs in the ACS took place between 1985 and 1990. From 1998, recruitment was focused on young drug users (≤30 years). No HIV infections were found among IDUs from 1999 until 2004, in 2005 two IDUs were tested positive (incidence 0.85 per 100 PY). In 2006 and 2007, no HIV infections were found among non-injecting and injecting drug users, see Figure 4.13 (www.amsterdamcohortstudies.org).

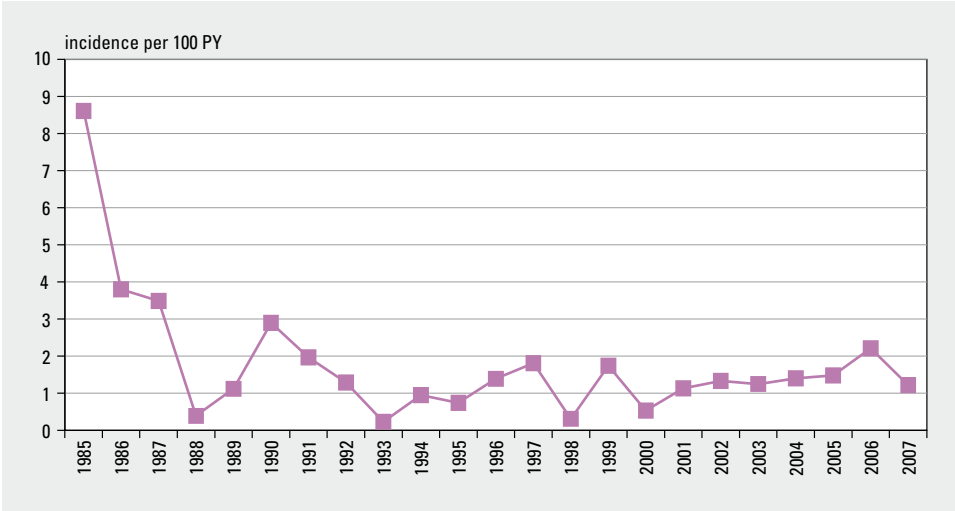


Figure 4.12: Yearly HIV incidence among MSM in Amsterdam Cohort Studies (Source Overview of the Amsterdam Cohort Studies among homosexual men and drug users, Health Service, Amsterdam, May 2008 (www.amsterdamcohortstudies.org

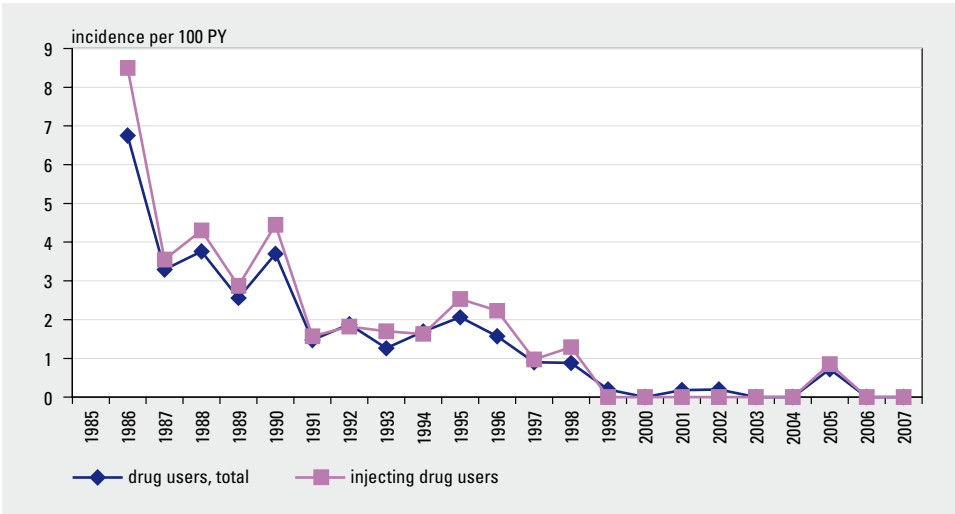


Figure 4.13: Yearly HIV incidence among IDUs (30 years or younger at entry) in Amsterdam Cohort Studies (Source Overview of the Amsterdam Cohort Studies among homosexual men and drug users, Health Service, Amsterdam, May 2008 (www.amsterdamcohortstudies.org)

4.1.8 Discussion

In 2007, 306 new HIV diagnoses were recorded in STI centres (1.7% positivity rate among those not yet known to be HIV positive) which is comparable to 2006. It is not yet clear if this stabilisation will also be reflected in the total number of new HIV patients in care in 2007, as registration data of all HIV patients in care by year of diagnosis have a considerable lag time prior to being complete. So far 864 new HIV diagnoses were reported in 2007.

In 2007, the proportion of STI clinic attendees tested for HIV in the national registration of STI centres, increased further to 86%, enhanced by the introduction of 'opting-out' testing procedures in some of the STI clinics. In total, 306 individuals were newly diagnosed with HIV, the majority in MSM (77%). The HIV positivity rate among both MSM and heterosexuals has attenuated further in 2007. In HIV cases reported in care, the increase of the proportion MSM continued in 2007, while the proportion of heterosexuals further decreased. Sixty-five percent of the HIV infections were diagnosed in MSM, who were mainly Dutch. The majority also acquired their HIV infection in the Netherlands. In contrast to the MSM population, the majority of the heterosexuals acquired the HIV infection abroad; in sub-Saharan Africa and to a lesser extent in Latin America and the Caribbean. Migration thus still plays an important but decreasing role in the Dutch HIV epidemic.

The high uptake of testing with the introduction of an opting-out system, guarantees a valuable insight in the prevalence of HIV among the clinic attendees. With such a high uptake, the additional value of anonymous testing needs careful evaluation, in particular because the additional tests in the past included a relatively large number of HIV tests in known HIV-positive people.

The evaluation of the anonymous unlinked HIV surveys in 2007 among IDU, CSW and migrants from HIV-endemic countries, emphasized the need to investigate further existing routine data sources on risk groups. In 2008, the possibility of collecting data from infectious disease screening of drug users in health care is being explored. We expect to collect data on a regular basis from this screening in 2009. In addition, data on ethnicity from the national HIV screening among pregnant women will contribute to the insight in the HIV (as well as syphilis and hepatitis B) epidemiology in the general heterosexual population.

Concurrent STI were diagnosed in 43% of known HIV infected who were consulting a STI centre, especially among MSM (45%), facilitating HIV transmission. This indicates continuing extremely high risk behaviour in this group. In 2008, a pilot project for STI screening of HIV positive MSM (and heterosexuals) in care has started in Amsterdam and Rotterdam.

One of the constraints of the current STI and HIV/AIDS surveillance system is that most data do not represent recent HIV infections, apart from the ACS and one study among MSM in Amsterdam. In 2006, a research collaboration started between EuroHIV, the Health Protection Agency in London and six countries including the Netherlands (RIVM and GGD Amsterdam) in which various assays for the detection of recent HIV infections are being validated. The first results of this study are reported to the ECDC. Results for the Netherlands will be described in a separate publication. This study might provide more insight in recent and prevalent infections among newly diagnosed HIV infected MSM in Amsterdam. Furthermore, insight into newly acquired HIV infections will provide valuable information on the course of the HIV epidemic and is helpful in monitoring the effect of changes in risk behaviour and prevention activities.

To get more understanding of the number of HIV-positive people diagnosed and undiagnosed, the national estimate of 18,500 people living with HIV/AIDS in the Netherlands will be updated in 2008.

In 2008, we will start a new collaboration with the HMF and STI centres to study the time-interval between a positive HIV test and the start of HIV treatment. By using modelling, virological and behavioural data, we will study the frequency, prevalence and potential impact of a delayed treatment on HIV transmission in the Netherlands.

4.2 Hepatitis B

4.2.1 Key points

- In 2007, the incidence of notified cases of acute HBV was 1.3 per 100,000 inhabitants and was higher in men (2.1) than in women (0.6).
- Unprotected sexual contact was the most important risk factor for acute hepatitis B.
- The number of acute HBV notifications decreased with 9% compared to 2006.
- Genotype A was most common in the Netherlands in acute HBV patients.

4.2.2 Recent trends hepatitis B

In 2007, 220 cases of acute hepatitis B were diagnosed in the Netherlands, 168 men (76%) and 52 women (24%), a decrease of 9% compared to 2006 (2006: 242 cases, 2005: 302 cases).[41]

Gender, sexual preference and age group
The incidence rate for acute HBV in 2006 was 1.3 per 100,000 and was higher in men (2.1) than in women (0.6) (Figure 4.14). The median age at diagnosis for men was 41 years (range: 2-75) and was significantly higher ($p<0.05$) than for women 29 years (range: 15-91). Incidence in men was highest in 30-34 year old men (4.3 per 100,000), in women incidence was highest in the age group of 20-24 years (2.5 per 100,000).

Sexual contacts, heterosexual as well as homo- or bisexual contacts, were the most reported routes of transmission (Figure 4.15). Since 2003, number of infections due to

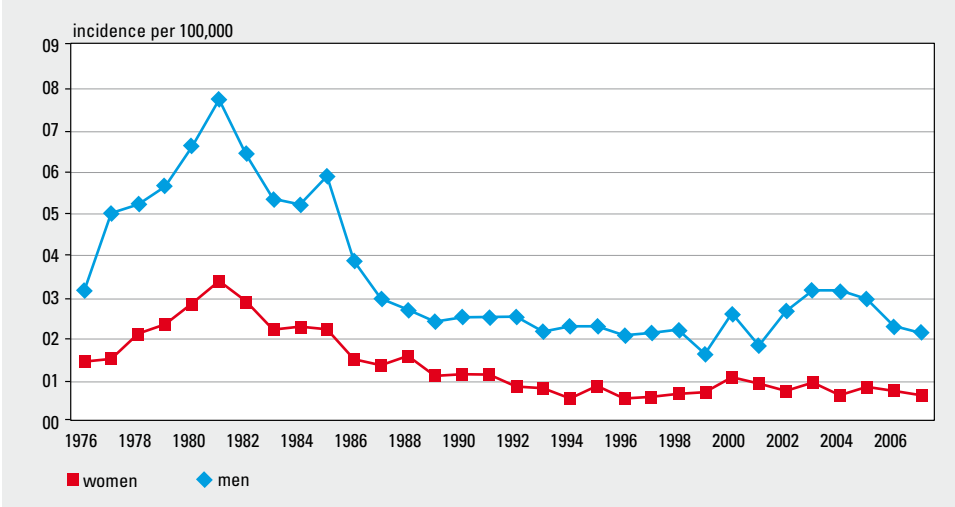


Figure 4.14: Incidence of acute HBV by gender, 1976-2006. (Source: RIVM-Osiris, notification data)

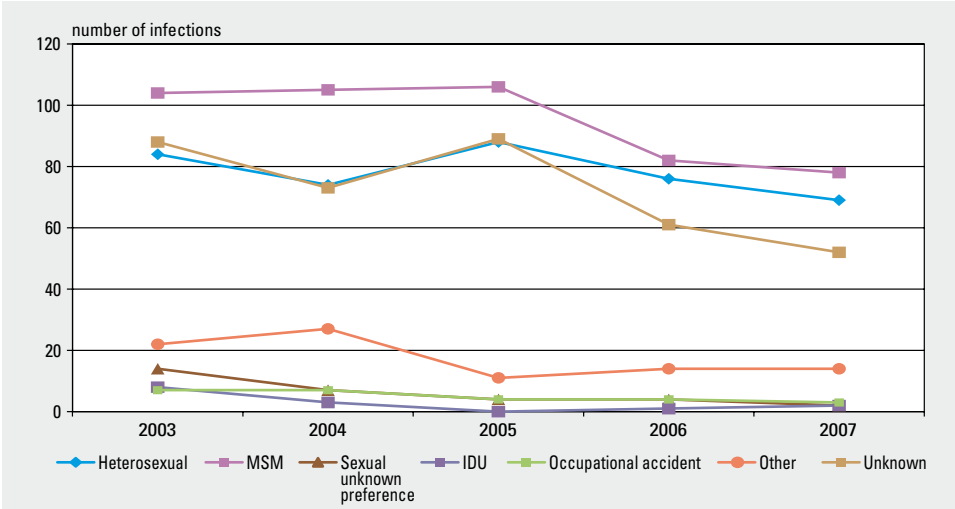


Figure 4.15 Number of infections of acute HBV by route of transmission, 2003-2007. Source: RIVM-Osiris, notification data)

MSM decreased with 25%. Since 2004, acute hepatitis B infections due to injecting drug use are very low in the Netherlands.

At time of diagnosis, MSM were on average 8 years older than heterosexually infected persons (p=0.07, Table 4.3). Heterosexuals reported more often to be born abroad (p<0.05). Among MSM, 72% acquired the infection through a casual partner, among heterosexuals this was 54% (p<0.05).

Table 4.3: Proportion of HBV cases by route of transmission (three most common routes), by sexual preference, the Netherlands, 2007 (Source: RIVM-Osiris, notification data)

	MSM (n=78)		Heterosexual contact (n=69)		Total (n=220)	
	N	%	N	%	N	%
Infected abroad	11	14%	16	21%	38	17%
Born abroad	8	10%	19	28%	43	20%
Infected by casual partner	56	72%	37	54%	95	43%
Median age (+ range)	42 (12-63)		34 (15-81)		39 (2-91)	

* NB: proportions per category can overlap, so percentages do not add up to 100%

Regional pattern

The incidence of acute HBV is unevenly distributed across the Netherlands, (range: 0.0 – 3.1 per 100,000), see Figure 4.16.

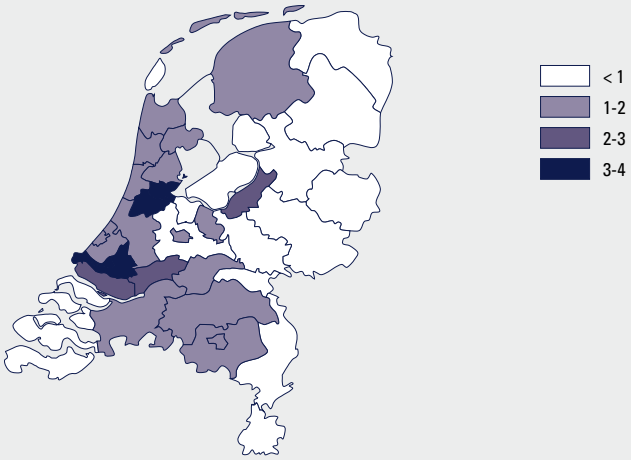


Figure 4.16: Incidence of acute hepatitis B per 100,000 inhabitants by region, 2007 (Source: RIVM-Osiris, notification data)

Risk groups

Of the acute HBV cases, 77% (n=170) was born in the Netherlands, 20% (n=43) was born abroad and in 3% the country of birth was unknown. Of the cases born abroad, 26% came from HBV high endemic regions (HBsAg prevalence ≥ 8%), 70% from intermediate endemic regions (HBsAg 2-7%) and 4% from low endemic regions (HBsAg ≤ 1%). Seventy-six percent of all acute HBV cases reported to be infected in the Netherlands, 17% reported an infection abroad and in 7% of the cases the country of infection was unknown.

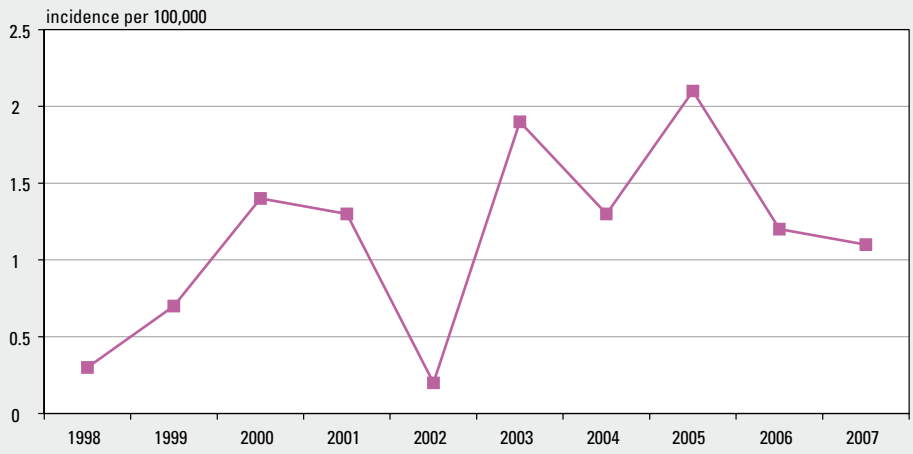


Figure 4.17: HBV incidence (per 100,000 donor years) among regular blood donors in the Netherlands (blood donor register 1998-2007)

Blood donors
In the Netherlands, blood donors are screened for HBV. People who report specific risk factors for blood transmissible infections are not accepted. In 2007, in the total group of screened volunteers, 19 HBV infections were found, four in regular donors and 15 in new donors. The overall incidence of HBV among regular donors decreased the last two years (2007: 1.1 per 100,000 donor years, Figure 4.17)

4.2.3 HBV in the national surveillance of STI centres

In 2007, 244 diagnoses of HBV were registered in the national STI surveillance network; 21 of those (9%) were acute and 223 (91%) were chronic. Most patients were male (72%) and aged between 20-29 years (48%). In men, 72% of the diagnoses were made in heterosexual men.

About 27% of the diagnoses were made in Dutch individuals. Among migrant populations, most diagnoses were made in cases from Sub-Saharan Africa (21%), Surinam and the Antilles (11%) and Eastern Europe (9%).

In addition, 1,914 individuals appeared to have markers of recovered HBV infection (NA Amsterdam).

4.2.4 Vaccination policy of HBV

The Netherlands is a low endemic country with a higher prevalence of HBV in specific risk groups and import of infection. To increase HBV protection, a vaccination programme was started in 2002 targeted at MSM, hard drug users, sex workers, and heterosexuals with multiple sex partners, in addition to individuals working in medical professions, pregnant women, newborns with migrant parents (HBV highly endemic regions), and children with Down syndrome. The vaccination programme for behavioural risk groups is co-ordinated by The Netherlands Association for Community Health Services (GGD Nederland).

From 2002 up to January 2008, approximately 82,000 persons received a first HBV vaccination, 65,000 (79%) %also received a second one, and 49,000 (60%) persons were fully vaccinated. Also, about 7400 (9%) persons appeared to be immune for an HBV infection and 563 (0.7%) persons were chronic carriers.[42]

4.2.5 Molecular epidemiology of acute HBV

In 2006, 220 acute cases were notified, and the genotypes of 100 have been determined up till now. As well as in previous years, genotype A was the most common genotype (63%), followed by genotype D (26%). The proportion of acute HBV cases with genotype A decreased in 2007 compared to 2006, while genotype D has increased compared to 2006 (Figure 4.18).

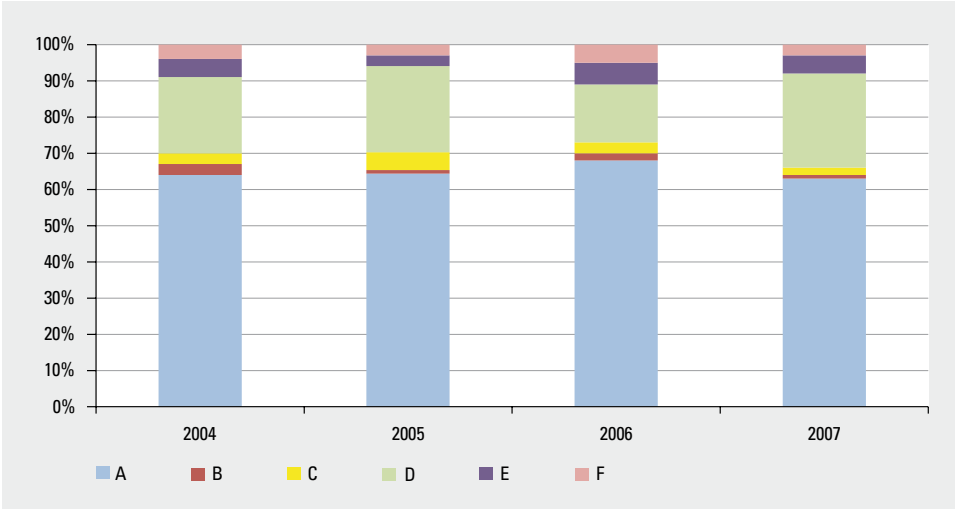


Figure 4.18. Genotype distribution of acute case of HBV infection, 2004-2007

Of all infections with genotype A in 2007, 44% were acquired by sexual contact between MSM and 30% by heterosexual contact. Between 2004-2007, the fraction of MSM within the identical genotype A cluster decreased from 61% in 2004 to 47% in 2007.

Within genotype D, most patients were infected by heterosexual contact (50%), comparable to previous years. Patients with genotype B, C, D en E reported more often to be infected abroad or via a partner from abroad compared to patients with genotype A.

4.2.6 Discussion

In 2007, the incidence of acute HBV in the Netherlands was 1.3 per 100,000, which is a decrease compared to the previous years. In men, the incidence decreased from 3.1 in 2003-2004 to 2.1 in 2007, in women the incidence decreased slightly from 0.9 in 2003 to 0.6 in 2007. Compared with 2003, the number of notifications of acute hepatitis B infection decreased with 33%, mainly due to a decrease in notified cases among MSM (-25%) and due to a decrease in notifications with an unknown route of transmission (-41%). Genotype A is still the most common genotype in the Netherlands (63%), mainly found in MSM (44%). The fraction MSM within the identical genotype A decreased between 2004 and 2007, which indicates less sustained transmission. Together with the decrease in number of notifications, this changing pattern of genotype is probably due to the vaccination campaign, targeted at high-risk groups, including MSM.

During an expert meeting in March 2007, evidence was reviewed to guide the future vaccination campaign. Main conclusions from this meeting were that MSM remain the most important high-risk group for HBV, whilst CSW and (injecting) hard drug users and heterosexuals contribute little to HBV transmission. The HBV vaccination campaign will be enhanced for MSM, continued for CSW and hard drug users and discontinued for heterosexual people with a high rate of partner change.[43]

4.3 Hepatitis C

Compared to 2006, an increase of 60% was observed in the number of cases of acute hepatitis C (HCV) infections reported in 2007, which was due to a rise of cases among MSM (Figure 4.19). Of the 30 individuals who contracted HCV through sexual contact, 29 were men having sex with men. Most infections were reported by public health services in Amsterdam and Rotterdam.

Age at diagnosis varied from 29 to 60 years. The majority of men originated from the Netherlands (69%) and the reported country of infection was also most frequently the Netherlands (73%). For 50% of the cases, no signs or symptoms of acute infection were reported.

In the Netherlands, blood donors are screened for hepatitis C at each donation. In 2007, in the total group of screened volunteers, four HCV infections were found, one in a regular donor and three in new donors. The overall incidence of HCV among regular donors fluctuated the last years (2007: 0.3 per 100,000 donor years, Figure 4.20).

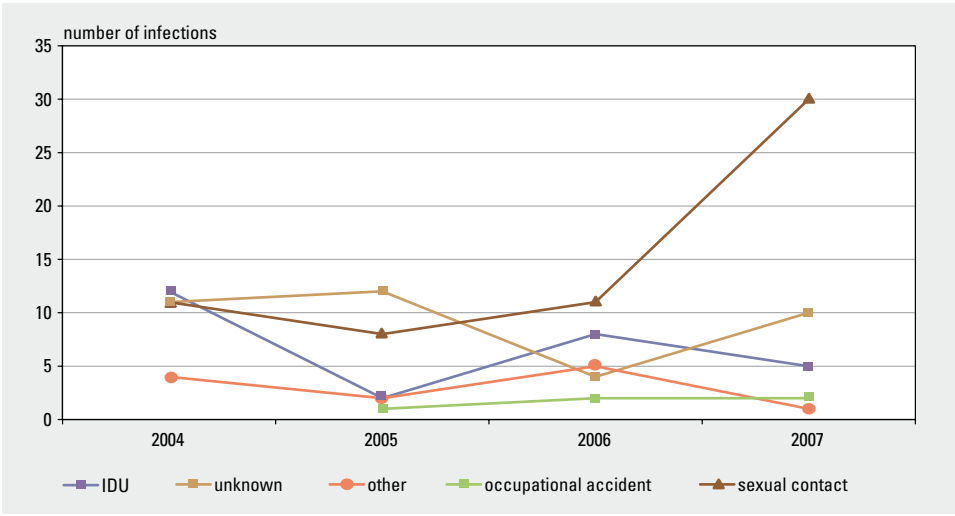


Figure 4.19 Number of infections of acute HBV by route of transmission, 2003-2007. Source: RIVM-Osiris, notification data)

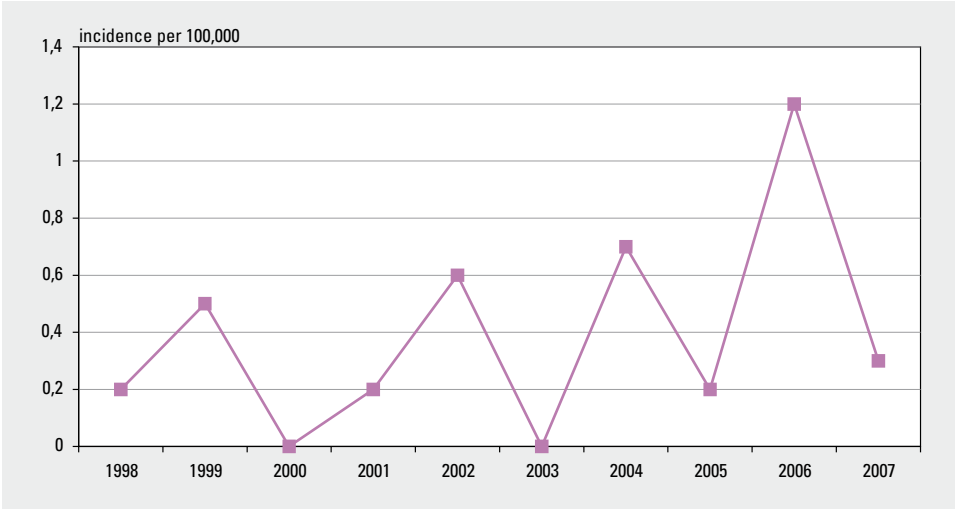


Figure 4.20: HCV incidence (per 100,000 donor years) among regular blood donors in the Netherlands (blood donor register 1998-2007)

4.4 Genital warts

4.4.1 Key points

- In 2007, 2,061 diagnoses of genital warts were reported in the national surveillance of STI centres (men: 60%, women: 40%).
- Genital warts are the most prevalent viral STI reported in the Netherlands. Compared to 2006, the number of diagnoses increased with 7%.

4.4.2 Recent trends genital warts

Genital warts, a viral STI caused by human papilloma virus, were the most frequently diagnosed viral STI in all STI centres. In 2007, 2,061 diagnoses of genital warts were made (1,233 in men and 828 in women). The number is probably higher, because reporting of genital warts is optional. Of all genital warts infections, 79% were diagnosed in Dutch men, 85% in Dutch women (Appendix table A.13a-b).

Most diagnoses were made among men aged 20-29 years (46%) and among women aged 20-24 years (45%). In the older age groups the number of infections is lower. A co-infection with chlamydia was found in 10% of those being diagnosed with genital warts, a co-infection with gonorrhoea in 3% and syphilis in 2% and a co-infection with HIV in 0.6% (only in men). A history of gonorrhoea, infectious syphilis or chlamydial infection was reported for 15% of the women and for 8% of the men diagnosed with genital warts (Appendix table A.18 a/b, NA Amsterdam).

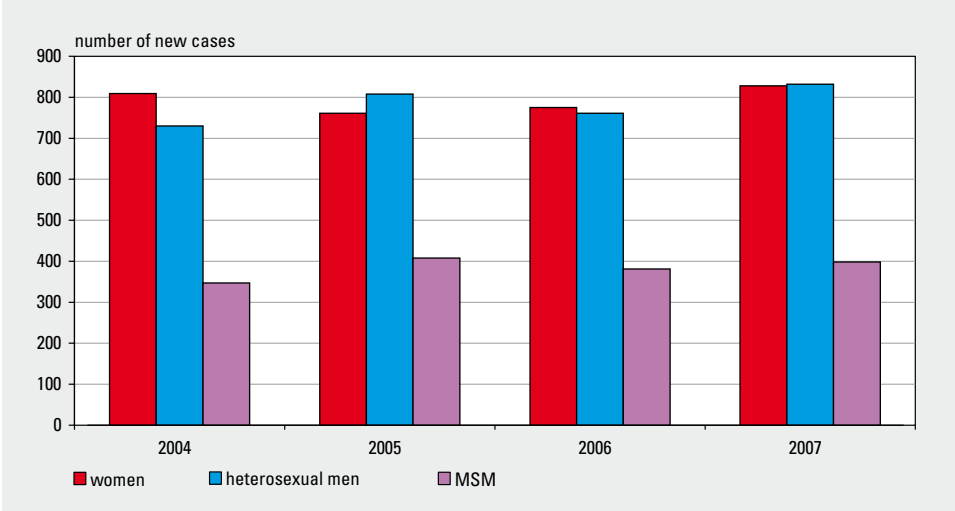


Figure 4.21: Number of new cases of genital warts by gender and sexual preference, national STI surveillance network, the Netherlands, 2004-2007

Compared to 2006, the registered number of diagnoses of genital warts has increased by 7% in 2007, both in men and in women.

4.4.3 Discussion

Human papilloma viruses are the most common sexually transmitted viral agents. Genital warts, frequently caused by HPV type 6 or 11, are the most prevalent viral STI diagnosed in the Netherlands in 2007, Persistent HPV infection might eventually lead to cervical cancer. About 20 different genotypes are able to cause cervical cancer, and the most prominent, so-called High-Risk genotypes are HPV-16 (app. 55% of cervical cancer cases), HPV-18 (approximately 11%), HPV-45 (app. 4%) and HPV-31 (app. 3%). Effective HPV vaccines have been developed (Merck (Gardasil): HPV-6, -11, -16, -18 and GSK (Cervarix): HPV-16 and -18). In April 2008, the Dutch Health Council has advised the Ministry of Health, Welfare and Sports to include the HPV vaccine in the National Immunisation Programme for young girls (age before sexually active). For monitoring the effect of vaccination, standard recording of genital warts in the SOAP registration of the STI centres, especially in younger age groups, with a distinction between new and recurrent infections, would be valuable.

4.5 Genital herpes

4.5.1 Key points

- In 2007, 671 diagnoses of primary genital herpes were made in the national surveillance of STI centres (men: 52%, women: 48%).
- Diagnoses of genital herpes increased with 13% compared to 2006.
- 37% of the diagnoses in men were made in MSM.

4.5.2 Recent trends genital herpes

In 2007, 671 diagnoses of primary genital herpes were made (347 in men and 324 in women) in all STI centres, representing 4% of all positive STI diagnoses. Of all diagnoses, HSV type 1 accounts for 41% (n=275), HSV type 2 for 50% (n=335) and HSV type 1 or 2 for 6% (n=39). In addition, 27 patients with a recurrent genital herpes infection were diagnosed.

A co-infection with chlamydia was found in 7.5% of those being diagnosed with genital herpes, a co-infection with gonorrhoea in 3.4% and syphilis in 1.6% and a co-infection with HIV in 1.5%. A history of gonorrhoea, infectious syphilis or chlamydial infection was reported for 21% of the men and for 10% of the women diagnosed with genital herpes (Appendix table A.18 a/b, NA Amsterdam).

Gender, sexual preference and age group
Among men, most diagnoses of genital herpes were made in men aged 25-29 years (19%); in women most diagnoses were made in women aged 20-24 years (38%). In the older age groups the number of infections is lower (Table A.12). Of all diagnoses in men, 63% (n=219) were made in heterosexual men and 37% (n=127) in MSM (Appendix table A.14).

Trends in time
From 2004-2007 there was an increase in primary herpes infections of 36%, mainly caused by an increase of herpes infections in women (79%). In heterosexual men the number of infections remains stable, and in MSM there was an increase of 51% between 2004 and 2007 (Figure 4.22).

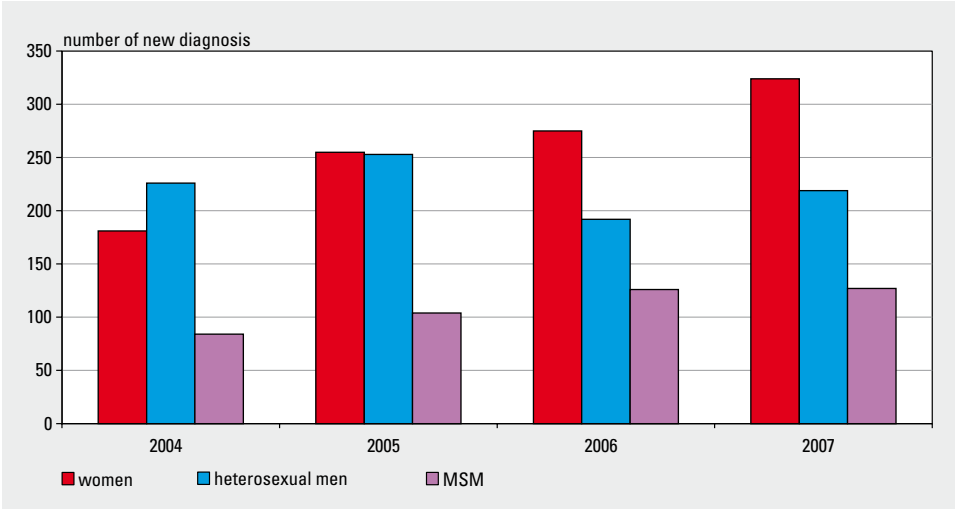


Figure 4.22: Number of new diagnoses of primary genital herpes infections by gender and sexual preference in the national STI surveillance network, 2004-2007

Risk groups

About 76% of the diagnoses in were made in Dutch men, 77% in Dutch women (Appendix table A.13). Among non-Dutch, the highest percentage of diagnosis was made in men and women from Surinam and the Netherlands Antilles (10% and 9% respectively).

In men, 6% of the infections were diagnosed in patients who had recent (past 6 months) contact with CSW, whereas for women 6% were diagnosed in CSW (Appendix table A.15). In 9% (n=60) of the cases of genital herpes the diagnosis was made in individuals who reported a prior positive HIV test (known HIV positives)

4.5.3 Discussion

Diagnoses of genital herpes, mainly caused by HSV-2, increased with 13% in 2007. At national population level, results from a seroprevalence study performed in 1995-1996 showed an overall HSV-1 prevalence of 60%. For HSV-2, the overall prevalence was 8.4%.[44] In 2006, a new seroprevalence study has been performed in the Netherlands, but results are not available yet.

Vaccines against *Herpes simplex* virus are being developed. The National Institute of Health in the United States is currently in the midst of phase III trials of a vaccine against HSV-2, called Herpevac.[45-47] The vaccine has only been shown to be effective for women who have never been exposed to HSV-1. Overall, the vaccine is approximately 48% effective in preventing HSV-2 seropositivity and about 78% effective in preventing symptomatic HSV-2. As vaccine development is still in a preliminary phase, it is too early to discuss availability in the Netherlands.

5 FOCUS ON SPECIFIC GROUPS

5.1 MSM

Men who have sex with men clearly are at higher risk of contracting an STI or HIV infection. This group appears to be well reached by the low-threshold STI centres, based on the relatively high percentage of MSM seen in the centres (28% of men reported homo- or bisexual preference) compared to the general population (6-7%).[48] However, to what extent the MSM visiting the STI centres accurately represent all MSM in the Netherlands, is not known. Probably the urban population is over-represented as 44% of MSM clinic attendees were seen in Amsterdam STI centre and an additional 20% in Rotterdam, The Hague and Utrecht. Nevertheless, proportions remained stable over the years; hence the primary objective of surveillance among high risk groups and valuable trend analysis can be achieved.

MSM remain the group at highest risk for acquiring and transmitting STI, including HIV, in 2007. Following dramatic increases in gonorrhoea and syphilis in the 1970's and 1980's and HIV in the 1990's of the previous century, and smaller increases in the beginning of the new millennium, overall numbers have decreased considerably in the last couple of years. The decrease in posititivity rates for these three STIs is also obvious among MSM at the STI clinics, but rates are still 6, 10 and more than 25 times higher, respectively, than in heterosexual men. Positivity rates of all STIs increase with age among MSM, unlike those in heterosexual men and women. LGV cases are, since 2004, only diagnosed in MSM.

The fraction of new HIV cases attributable to MSM at the HIV registry rose in the past years, confirming that this is the main population group where HIV transmission in the Netherlands occurs. At the same time, MSM who are aware of their HIV-positive status still practice very high-risk or unsafe sex, as seen by the alarmingly high percentage of co-infections: 45% of the known HIV- positive MSM and 43% of the new HIV-positives diagnosed in MSM attending an STI clinic had a concurrent STI diagnosed. Also this year a sudden increase in sexually transmitted acute Hepatitis C was seen in this specific group.

Chlamydia infections are equally common among heterosexuals and MSM, but the location of infection for MSM is anorectal in more than half of the cases (59%). LGV infections were all anorectal. The location of gonorrhoea infections in MSM was in 46% of cases anorectal and 18% oral. According to the behavioural surveillance data, 40% of MSM reported the use of condoms at their last sexual intercourse (NA Amsterdam and Utrecht); this was not more frequent in known HIV-positive MSM (37%), but it was higher than the 32% reported for MSM in 2006 and higher than among heterosexual men (29%). No data are available on the consistency, adequacy and correct use of condoms or other STI-protection in different types of sexual activities. The proportion with an STI (Chlamydia, Gonorrhoea, Syphilis, HBV or HIV) was higher in MSM reporting not to have used condoms (12% vs. 8%, $p<0.05$). The number of partners in the last six months reported was more than 10 for 21% of MSM visiting the STI centre (NA Amsterdam), whereas this was only 7% and 5% for heterosexual

men and women. However, the MSM with more than 10 partners reported were hardly at higher risk of a diagnosed STI (21%) than those with fewer partners (19%).

5.2 Young people

In the young (heterosexual) population, chlamydia remains by far the most frequently diagnosed bacterial STI. Girls under 20 years of age are disproportionately affected by chlamydia. Heterosexual boys under 20 years and men from 20 to 25 years are both at equally high risk for chlamydia. In the STI centres, about 40% of clinic attendees in 2007 was under 25 years old, i.e. 28% of male and 53% of female consultations; 56% of all chlamydia infections was found in this group, 36% of diagnoses in men and 70% of those in women. Especially high chlamydia positivity rates are found in young people from Surinamese/Antillean origin. Young men and young Surinamese/Antillean might need to be addressed more specifically in order to motivate them to be tested as well.

For gonorrhoea, 32% of infections were seen in the group under 25 years old; 65% of diagnosis in women and 18% in men. While gonorrhoea and syphilis are in particularly diagnosed in older age groups, especially in MSM, the highest gonorrhoea positivity rate was seen among heterosexual men, mostly migrants, aged 15-19, suggesting specific transmission networks and/or high risk behaviour within this group as well, although absolute numbers of infections are low.

Of the newly reported HIV cases in 2007 in the HIV registry, none were in children below 15 years. In teenagers between 15-19 years six new HIV cases were reported (0.8% of all); two by heterosexual transmission and four in young MSM. Young adults (20-24 years) accounted for 33 (4%) of all new HIV cases (23 MSM, 10 heterosexuals).

While the age criterion, i.e. offering free STI-consultation for anyone under 25 years old, is highly effective for tracing for chlamydia and gonorrhoea, only a very low number of positive tests is found for infectious syphilis and HIV among young people under 25 years. In the 6,318 young people in this age group (with no other indication of high risk, see table A10b), only two cases of infectious syphilis were found and no cases of HIV (of 6,171 tested for syphilis and 5,987 for HIV, see [32]).

Condom use (at last sexual contact) was reported by 20% of women under 25 years and 26% of heterosexual men under 25 years (under 20 years: 17% and 26%, respectively). Chlamydia was more common among under 25's who said not to have used condoms than those who had, i.e. 15% versus 12% in young women and 16% versus 8% in young men. The rate of partner change is higher in young men than young women (14% vs. 11% with six partners or more in the last six months). Chlamydia positivity rate in young people under 25 years was related to the number of partners: 12% in women with one partner in the last six months versus 19% in those with six or more partners in this period of time, and 11% versus 21% in the same groups of heterosexual men.

5.3 Ethnic minority populations

Compared to the general population in the Netherlands, some ethnic groups were represented in higher proportion among STI clinic attendees than their proportional presence in the country (Surinamese and Netherlands Antillean), others in lower proportion (Moroccan and Turkish). Migrants from the former Dutch colonies in the Caribbean account for 27% of the non-western immigrants.[49] In 2007, 41% of STI clinic attendees of non-western origin had this ethnic background. However, taking into account that the majority of consultations take place in 'urban' STI centres such as Amsterdam and Rotterdam, where autochtonous Dutch account for only half of the population, more attendees of ethnic origin could have been expected.

As shown in Table 5.1, positivity rates for genital chlamydia, gonorrhoea, syphilis and HIV remain higher in people from Surinam/ Netherlands Antilles (20%), followed by people from Morocco/ North Africa, Asia or Sub Saharan Africa (all 17%). For Dutch attendees, STI positivity was 12% (Table 5.1). It is not clear if the group visiting the STI centres is a subgroup at higher risk than the rest of the Surinamese/Antillean people. However, higher positivity rates in this ethnic group have been reported in prevalence surveys as well, i.e. for chlamydia [13] and HIV surveys. [50, 51] At present, data from other surveillance sources (GP's, pregnant women) lack information on ethnic group, but these data sources will be further investigated in 2008. Apart from the Surinamese/Antillean group, persons from North Africa/Morocco and Eastern Europe showed higher positivity rates for gonorrhoea and syphilis. Furthermore, the larger part of new HIV cases acquired through heterosexual contact did not originate from the Netherlands (77%); most of these (44%) were from sub-Saharan Africa.

The higher STI positivity rates in these ethnic groups, point to the need for more targeted intervention and STI education adjusted to their specific cultural background and situation.

The higher STI/HIV rates in these ethnic groups may be explained by factors such as recent migration, contact with people from the home countries or, potentially, different culture/ habits among these ethnic groups. Assortative sexual mixing patterns may contribute to high STI prevalence within the ethnic groups. Between 4% and 14% of clinic attendees of different non-Dutch ethnic groups, reported sexual contact abroad in the previous three months; the country of origin was most frequently reported. Behavioural data in ethnic groups showed that the rate of partner change reported was not higher in the ethnic groups with higher STI rates mentioned above: people from Europe (other than Eastern Europe) had the highest rates, with 34% reporting six or more partners in past six months. In autochtonous Dutch clinic attendees this was 11%. Differences in reported condom use at most recent sexual contact between autochthonous Dutch and other ethnicities were also not significant. Condom use with last partner ranged from 23% (among Moroccans and North Africans) to 44% (among Latin and South Americans) per ethnic group. Of the different groups, the Latin/South Americans most frequently reported to have had a former HIV-test (72%), while this was the least frequently reported by people from Turkey (41%). The rate of previous positive STI diagnosis was significantly higher among Surinamese

and Antillean migrants. Of all Antillean clinic attendees, 19% had a previous positive STI diagnosis compared to 9% in Dutch (Table 5.1).

Table 5.1: Sexual behaviour among ethnic groups

	≥6 partners**	% condom use**	% sex abroad**	Previous HIV-test	Previous positive HIV-test	Previous STI***	STI# diagnosis
Netherlands	11.0	26.9	7,8	46.0	1.8	8.5	11.8
Turkish	10.9	23,6	7.2	41.4	0,8	7.0	15.3
Moroccan	9.2	23.0	8.2	42.0	0,6	7.7	17.3
Surinamese	3.9	25,2	6.,0	60.5	1.2	9.4	19.4
Antilleans	9.1	25.8	3.8	54.8	2.8	19.1	20.7
East Europeans	14.7	35.9	14.3	61.5	1.1	5.2	15.0
Africans	9.9	31.6	8.0	54.8	1,6	8.2	17.2
Latin Americans	13.5	44.1	11.1	71.7	5.3	5.9	14.3
Other Europeans*	34.1	32.6	11.9	55.6	1.0	11.9	13.8
Asians	12.2	33.1	8.8	58.9	3.0	8,3	16.8

* other Europeans=Patients from European countries except Eastern Europe and the Netherlands

** Amsterdam and Utecht not available

*** Amsterdam not available

At least one of the following: chlamydia, gonorrhoea, syphilis, HIV

5.4 Injecting drug users

Injecting drug use accounted for 5% of all registered HIV cases. This proportion has decreased since 1991 to 0.6% of new HIV cases in 2007. In the Amsterdam Cohort Studies, no HIV infections were found among non-injecting and injecting hard drug users in 2007. These results indicate that IDU currently play a minor role in the current Dutch HIV epidemic, however the burden of HIV is high within the group of IDU.

Of all STI clinic attendees, 0.5% reported to have (ever) injected drugs. Of them, 12% were diagnosed with a STI, indicating this group is not at higher STI-risk than others. The core group of (injecting) drug users might however not come to the STI centre. Surveillance on infectious diseases to assess prevalence of HIV, HBC, HCV and syphilis through specific healthcare services and methadone treatment centres for drug users is set up in collaboration with the Trimbos Instituut, but data collection from this risk group is hampered by limited access.

5.5 CSW and clients

Persons visiting STI clinics indicating they were working as a CSW or had visited a CSW in the past six months did not show a higher infection rate with chlamydia. However, positivity rates for gonorrhoea and syphilis were higher in CSW than in women not working in commercial sex. Twenty percent of gonorrhoea cases and 29% of syphilis cases

in women were diagnosed in CSW. Heterosexual men who had reported to have visited a CSW recently also had higher gonorrhoea positivity rates than heterosexual men not reporting CSW visits. Among men, 5% of the chlamydial infections, 5% of gonorrhoea and 2% of infectious syphilis were diagnosed in men who had recent contact with CSW. Overall STI positivity was 10% for CSW and 9% for male clients of CSW.

The majority of CSW reported a previous HIV test (73%) and 31% of clients of CSW had had a former HIV-test; 0.2% of CSW and 2.6% of clients of CSW had a previous positive HIV-test. Fourteen percent of CSW and 11% of clients of CSW reported a previous positive STI diagnosis, which was higher than attendees without recent experience with commercial sex. In spite of lower positivity rates, monitoring of STI and HIV trends in CSW is important and providing free testing and care is essential to ensure this high-risk group will continue to come to the STI centres.

The median number of sexual contacts reported in the previous six months among CSW was 15 (mean=79); the number of partners reported was 3 among male clients of CSW. Fourty six percent of CSW and 32% of male clients of CSW reported to have used condoms at their last sexual encounter. Five percent of CSW and 11% of clients of CSW had sexual contact abroad in the last three months. Most reported countries of clients of CSW were Thailand, Germany and Brazil.

6 GENERAL CONCLUSIONS AND RECOMMENDATIONS

The national network of STI centres provides STI care for high risk groups. The absolute number of new STI consultations seen in the centres has increased steadily every year over the last decade. Nevertheless, positivity rates remained stable at an overall of 13%, suggesting a consistent successful targeting of those with transmissible STIs. Preliminary data from GP surveillance suggest that the increase in STI consultations with stable rates of diagnoses occurred not only in the STI centres, but also in the general practice. This would indicate that awareness for HIV/STI is rising in the country and more infected persons report for care. From a less optimistic point of view, however, it could also indicate a failure to bring down STI incidence and transmission rates despite improved access to testing and treatment and investments in prevention and health education.

Homosexual transmission accounted for the majority of new HIV-infections in 2007. MSM, and in particular the HIV-positive among them, remain the group most at risk for STI in 2007. The re-emergence of LGV, increased reporting of sexually transmitted HCV[11] [52, 53] and high numbers of concurrent STI diagnosed in this group, indicate that unsafe sex practices are still common among (HIV-positive) MSM. This suggests that prevention efforts aimed at this group need to be revisited urgently. Further involvement of HIV consultants in STI prevention and control could be explored. Moreover, this also indicates a need to implement routine STI screening (and surveillance) among HIV positive MSM. HIV positive patients currently in care are incidentally screened serologically on syphilis, HBV and HCV, but no systematic comprehensive clinical screening is in place yet. Integrated analysis of STI screening data of all HIV positives may improve insights in the prevalence and risks of concurrent infections in HIV positives.

A major concern remains the ongoing high positivity rate of chlamydia. The main burden of chlamydia, the most commonly diagnosed bacterial STI, is carried by young heterosexuals. Young men seem to be less well reached by the STI centres than young women; whether this is an effect of starting sexual experience later than girls or being less aware of the usefulness of STI-testing is not known. Alternatively, men might have symptomatic chlamydia infections more often and therefore rather visit their GP than an STI center. In addition to higher chlamydia risk in young people, chlamydia and other bacterial STI appear to be more prevalent in specific ethnic groups. Both risk groups are targeted by STI centres; for most STIs, positivity rates appear to stabilize now. The large-scale Chlamydia Screening, which has started in 2008 in Amsterdam, Rotterdam and eastern Zuid-Limburg is directed at all inhabitants from 16 to 29 years old and thus aims to bring down chlamydia incidence among the young heterosexual population. Extra efforts are made within this program, in the large cities, to motivate specific ethnic groups to participate as well.

The STI trends presented in this report are based on the population seen in the STI centres. The STI care provided by these centres is aimed at high quality specialised care with easy access for high-risk groups. During 2007, specific quality indicators have been defined by a multidisciplinary taskforce[54], and following consultations with several stakeholders,

these have been endorsed by the Centre for Infectious Disease Control to act as quality control framework. At present, more than 95% of STI clinic attendees fulfil one or more of the criteria set as indicators of high risk or are tested for reasons of anonymity. The current triage through high-risk indicators and routine testing for chlamydia, gonorrhoea and syphilis in all clients and HIV and hepatitis B in specific groups will be evaluated in 2008. HIV testing may be implemented in an 'opting-out' system in more STI centres, but whether this needs to apply for all clients is still to be decided. During 2008 further evaluation of the effectiveness of the current policy [55] is planned. Visitations to STI centres are scheduled, to enable monitoring and evaluation of quality of care at the STI centres.

Next to the STI/HIV surveillance in STI centers and HIV monitoring through HIV centers, other sources of information will be useful to get information on the population outside the high-risk groups. GPs are a major provider of STI care to the general population (estimated two third of care[14]). Data from surveillance of GPs (LINH, NIVEL) are now analyzed to get estimates of the number of STI-related consultations done by GPs and of the prevalence and incidence of the main STIs. More detailed information of testing and diagnosis by GPs are already available for men with urethritis-syndrome (2004-2007, to be published elsewhere) and will become available from the GP sentinel surveillance (huisartsen peilstations NIVEL) by the end of 2008.

Continuous surveillance of behavioural data is important to provide background data to observe trends in STI. The results of the behavioural surveillance in 2007 will be published elsewhere. The behavioural indicators in the STI surveillance system may be modified based on analysis and expert opinions and linked to other, international indicators. Migration and travelling play an important role in the occurrence of STI and awareness of international trends will be essential to put Dutch behavioural data into perspective of future risks.

6.1 Recommendations

Strengthening surveillance of STI and HIV:

- Strengthen integrated analysis of surveillance data from STI centres with STI data from other sources, such as antenatal data, data from HIV treatment centres and GP surveillance networks.
- Link surveillance of public sexual healthcare (aanvullende seksualiteits hulpverlening) with STI surveillance (aanvullende curatieve soazorg) to improve integrated assessment of STI prevention and cure.
- Explore using STI surveillance data to understand different transmission networks of (drug-resistant) STIs in high risk groups such as ethnic minorities, MSM and HIV positives.
- Monitor closely the high risk group of HIV-positive MSM and potential transmission routes from this group into other groups.
- Improve data collection to determine whether diagnosed HIV infections were acquired recently.
- Harmonise multidisciplinary guidelines for diagnosis and treatment.

Assess and improve strategies to reduce STI transmission:

- Evaluate the effectiveness of the current triage and testing policy in the STI centres in reaching high risk groups and reducing STI transmission.
- Improve insight in HIV-testing behaviour, including other venues than STI centres, to adjust strategies motivating people to get to know their HIV-status.
- Improve understanding of the impact of STI/HIV co-infections and STI infections at multiple locations on transmission, diagnosis and treatment.
- Assess the impact of partner notification on STI/HIV transmission.
- Assess the impact of chlamydia screening on attendance and STI detection rates in STI centres.
- Use modelling in estimating STI/HIV transmission based on various data sources.
- Strengthening molecular typing, for instance for gonorrhoea and HBV.
- Promote (operational) research to identify optimal strategies to interrupt transmission among high risk groups.
- Set an agenda of research linked to updating guidelines.

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APPENDIX A
TABLES AND FIGURES STI SURVEILLANCE

Table A.1: Number of consultations by sex

Sex	Total (%)
Men	39824(51.0)
Women	38210(48.9)
Transsexuals*	28(0.0)
Unknown	1 (0.0)
Total	78062

* Transsexuals are disregarded in the rest of the tables

Table A.2: Number of consultations per month

Month	Total (%)
January	6643(8.5)
February	5992(7.7)
March	6642(8.5)
April	5689(7.3)
May	6125(7.8)
June	6661(8.5)
July	6759(8.7)
August	7339(9.4)
September	6425(8.2)
October	7178(9.2)
November	6925(8.9)
December	5655(7.2)
Total	78033

Table A.3: Number of consultations by sex and age

Age (years)	Men (%)	Women (%)	Total (%)
≤14	18(0.0)	58(0.2)	76(0.1)
15-19	1572(3.9)	4910(12.9)	6482(8.3)
20-24	9448(23.7)	15756(41.2)	25204(32.3)
25-29	8397(21.1)	8289(21.7)	16686(21.4)
30-34	5630(14.1)	3400(8.9)	9030(11.6)
35-39	4847(12.2)	2270(5.9)	7117(9.1)
40-44	3862(9.8)	1534(4.0)	5396(6.9)
45-49	2673(6.7)	1110 (2.9)	3783(4.8)
50-54	1531(3.8)	560(1.5)	2091(2.7)
≥55	1846(4.6)	322(0.8)	2168(2.8)
Total	39824	38209	78033

Table A.4: Number of consultations by sex and ethnicity

Ethnicity	Men (%)	Women (%)	Total (%)
The Netherlands	31487(79.1)	31101(81.4)	62588(80.2)
Turkey	513(1.3)	127(0.3)	640(0.8)
Northern Africa/ Morocco	674(1.7)	236(0.6)	910(1.2)
Surinam	1889(4.7)	1587(4.2)	3476(4.5)
The Netherlands Antilles	737(1.9)	511(1.3)	1248(1.6)
Eastern Europe	417(1.0)	975(2.6)	1392(1.8)
Sub-Saharan Africa	770(1.9)	563(1.5)	1333(1.7)
Latin America	565(1.4)	610(1.6)	1175(1.5)
Europe else	671(1.7)	1116 (2.9)	1787(2.3)
Asia	712(1.8)	583(1.5)	1295(1.7)
Unknown	92(0.2)	86(0.2)	178(0.2)
Else	1297(3.3)	714(1.9)	2011(2.6)
Total	39824	38209	78033

Table A.5: Number of consultations for men by sexual preference

Sexual preference	Total (%)
Heterosexual	28689(72.0)
Homo/bisexual	11048(27.7)
Unknown	85(0.2)
Total	39822

Table A.6: Number of consultations by client of CSW (M) or CSW (F)

Sex worker (or client)	Male client (%)	Female CSW (%)
No	36284(91.1)	34475(90.2)
Yes, in past 6 months	3113(7.8)	3395(8.9)
Unknown	425(1.1)	339(0.9)
Total	39822	38209

Table A.7: Number of consultations by sex and injecting drug use

Injecting drug use	Men (%)	Women (%)	Total (%)
No	38261(96.1)	36444(95.4)	74705(95.7)
Yes, ever	102(0.3)	96(0.3)	198(0.3)
Yes, in past 6 months	69(0.2)	64(0.2)	133(0.2)
Unknown	1390(3.5)	1605(4.2)	2995(3.8)
Total	39822	38209	78031

Table A.8: Number of consultations by sex and prior HIV test

Prior HIV test	Men (%)	Women (%)	Total (%)
No	18610(46.7)	20222(52.9)	38832(49.8)
Yes, positive	1441(3.6)	29(0.1)	1470(1.9)
Yes, negative	18952(47.6)	17064(44.7)	36016(46.2)
Yes, result unknown	166(0.4)	143(0.4)	309(0.4)
Unknown	653(1.6)	751(2.0)	1404(1.8)
Total	39822	38209	78031

Table A.9: Number of consultations by sex and previous GO/CT/Lues in anamnesis (GGD Amsterdam is missing)

Previous GO/CT/Lues	Men (%)	Women (%)	Total (%)
Yes	3353(13.2)	3254(12.3)	6607(12.7)
No	21015(82.8)	22260(84.1)	43275(83.5)
Do not know	246(1.0)	204(0.8)	450(0.9)
Unknown	752(3.0)	747(2.8)	1499(2.9)
Total	25366	26465	51831

Table A.10a Reported reasons for consultation (only from January till June, Amsterdam is missing)

Reason	Men (%)	Women (%)	Total (%)
Symptoms	3284(28.1)	3244(26.6)	6528(27.3)
New relationship	2373(20.3)	2588(21.2)	4961(20.8)
Risk behaviour	5273(45.2)	5097(41.7)	10370(43.4)
Risk behaviour partner	552(4.7)	1236(10.1)	1788(7.5)
Partner HIV positive	45(0.4)	9(0.1)	54(0.2)
Notification	1212(10.4)	831(6.8)	2043(8.6)
Periodic screening	1121(9.6)	1490(12.2)	2611(10.9)
HBV vaccination	464(4.0)	405(3.3)	869(3.6)
Only information	10(0.1)	4(0.0)	14(0.1)
Other	245(2.1)	193(1.6)	438(1.8)
HIV test	827(7.1)	701(5.7)	1528(6.4)
Uncertainty, anxiety, concern	2288(19.6)	2695(22.1)	4983(20.9)
Condom failure	354(3.0)	478(3.9)	832(3.5)
Sexual violence	14(0.1)	137(1.1)	151(0.6)
Non HIV declaration or visa	49(0.4)	9(0.1)	58(0.2)
Child wish or pregnancy	114(1.0)	148(1.2)	262(1.1)
Needle stick or bite incident	6(0.1)	11(0.1)	17(0.1)
Total consultations	11678	12209	23887

Table A.10b Reported indication (only from July till December)

Indication	Men	(%)	Women	(%)	Total	(%)
MSM	5743	(28.0)	0	(0.0)	5743	(14.3)
< 25 years old	5844	(28.5)	10790	(54.6)	16634	(41.3)
CSW	219	(1.1)	1713	(8.7)	1938	(4.8)
Client of CSW	1880	(9.2)	45	(0.2)	1925	(4.8)
STI/HIV endemic area of origin	3225	(15.7)	2730	(13.8)	5966	(14.8)
Total consultations (with Amsterdam)	20513		19768		40300	
Symptoms*	2853	(22.0)	3045	(22.4)	5898	(22.2)
Partner in riskgroup*	4301	(33.2)	2988	(22.0)	7297	(27.5)
Referred*	202	(1.6)	188	(1.4)	390	(1.5)
≥ 3 partners in last 6 months*	6601	(51.0)	5342	(39.3)	11944	(45.0)
Notified*	1655	(12.8)	1234	(9.1)	2889	(10.9)
Anonymous test*	6738	(52.0)	6924	(51.0)	13670	(51.5)
Swinger*	676	(5.2)	690	(5.1)	1369	(5.2)
Other*	499	(3.9)	709	(5.2)	1209	(4.6)
Total consultations (without Amsterdam)	12946		13586		26545	

*=data Amsterdam unavailable

Table A.11a: Number of diagnoses by sex

Diagnosis	Men (%)	Women (%)	Total (%)
Gonorrhoea	1404(13.7)	423(4.9)	1827(9.6)
Chlamydia	3908(38.1)	3893(44.7)	7801(41.1)
Syphilis: primary	189(1.8)	12(0.1)	201(1.1)
“” : secondary	166(1.6)	9(0.1)	175(0.9)
“” : latens recens	162(1.6)	21(0.2)	183(1.0)
“” : latens tarda	45(0.4)	13(0.1)	58(0.3)
“” : not specified	26(0.3)	9(0.1)	35(0.2)
HIV +	262(2.6)	44(0.5)	306(1.6)
Genital warts	1233(12.0)	828(9.5)	2061(10.9)
Genital herpes: prim.: HSV type 1	126(1.2)	149(1.7)	275(1.5)
“” : prim.: HSV type 2	191(1.9)	144(1.7)	335(1.8)
“” : prim.: HSV type unknown	17(0.2)	22(0.3)	39(0.2)
“” : recurrent	16(0.2)	11(0.1)	27(0.1)
Hepatitis B: acute	11(0.1)	10(0.1)	21(0.1)
Hepatitis B: chronic	164(1.6)	59(0.7)	223 (1.2)
Hepatitis B: recovered	1305(12.7)	608(7.0)	1913(10.1)
Non specified Uretritis	258(2.5)	26(0.3)	284(1.5)
Candidiasis	230(2.2)	1084(12.4)	1314(6.9)
Bacterial Vaginosis/gardnerella	3(0.0)	1150(13.2)	1153(6.1)
Trichomoniasis	8(0.1)	133(1.5)	141(0.7)
Scabies	40(0.4)	1(0.0)	41(0.2)
Pubic Lice	9(0.1)	0(0.0)	9(0.0)
Ulcus e.c.i.	169(1.6)	55(0.6)	224(1.2)
Lymphogranuloma venereum	69(0.7)	0(0.0)	69(0.4)
Proctitis	240(2.3)	5(0.6)	245(1.3)
Total	10251 (100.0)	8709(100.0)	18960(100.0)

Table A.11b: Location of chlamydial infection by sex and sexual preference

Location	Men hetero (%)	MSM (%)	Women (%)	Total (%)
Urethral/cervical	2807(99.6)	455(37.7)	3757(89.2)	7019(85.2)
Anorectal	0(0.0)	710(58.9)	306(7.3)	1016912.3)
Oral	10(0.4)	35(2.9)	139(3.3)	184(2.2)
Unknown	1(0.0)	6(0.5)	11(0.3)	28(0.2)
Total	2818(100.0)	1206(100.0)	4213(100.0)	8237(100.0)

Table A.11c: Location of gonorrhoea by sex and sexual preference

Location	Men hetero (%)	MSM (%)	Women (%)	Total (%)
Urethral/cervical	429(97.9)	430(36.0)	358(66.8)	1217(56.2)
Anorectal	0(0.0)	554(46.4)	88(16.4)	642(29.6)
Oral	7(1.6)	209(17.5)	90(16.8)	306(14.1)
Unknown	2(0.5)	0(0.0)	0(0.0)	2(0.1)
Total	438(100.0)	1193(100.0)	536(100.0)	2058(100.0)

Table A.12a: Diagnoses by age in years, men

Diagnosis	≤14(%)	15-19 (%)	20-24(%)	25-29(%)	30-34(%)	35-39(%)	40-44(%)	45-49(%)	50-54(%)	>55(%)	Total
Gonorrhoea	0(0.0)	45(3.2)	211(15.0)	265(18.9)	217(15.5)	239(17.0)	188(13.4)	112(8.0)	73(5.2)	54(3.8)	1404
Chlamydia	0(0.0)	195(5.0)	1212(31.0)	898(23.0)	519(13.3)	390(10.0)	299(7.7)	197(5.0)	101(2.6)	97(2.5)	3908
Inf. syphilis*	0(0.0)	3(0.6)	26(5.0)	54(10.4)	80(15.5)	95(18.4)	93(18.0)	80(15.5)	46(8.9)	40(7.7)	517
HIV+	0(0.0)	4(1.5)	26(9.9)	46(17.6)	34(13.0)	56(21.4)	39(14.9)	25(9.5)	16(6.1)	16(6.1)	262
Genital warts	0(0.0)	35(2.8)	274(22.2)	288(23.4)	187(15.2)	179(14.5)	128(10.4)	65(5.3)	33(3.6)	33(2.7)	1233
Genital herpes	0(0.0)	4(1.2)	54(15.6)	67(19.3)	56(16.1)	52(15.0)	41(11.8)	27(7.8)	22(6.3)	24(6.9)	347

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.12b: Diagnoses by age in years, women

Diagnosis	≤14(%)	15-19(%)	20-24(%)	25-29(%)	30-34(%)	35-39(%)	40-44(%)	45-49(%)	50-54(%)	>55(%)	Total
Gonorrhoea	3(0.7)	91(21.5)	187(44.2)	64(15.1)	29(6.9)	23(5.4)	9(2.1)	11(2.6)	5(1.2)	1(0.2)	423
Chlamydia	5(0.1)	807(20.7)	1918(49.3)	705(18.1)	184(4.7)	115(3.0)	56(1.4)	55(1.4)	29(0.7)	19(0.5)	3893
Inf. syphilis*	0(0.0)	1(2.4)	7(16.7)	9(21.4)	9(21.4)	2(4.8)	7(16.7)	1(2.4)	3(7.1)	3(7.1)	42
HIV+	0(0.0)	2(4.5)	7(15.9)	10(22.7)	9(20.5)	8(18.2)	4(9.1)	3(6.8)	0(0.0)	1(2.3)	44
Genital warts	0(0.0)	108(13.0)	370(44.7)	176(21.3)	60(7.2)	44(5.3)	32(3.9)	16(1.9)	13(1.6)	9(1.1)	828
Genital herpes	0(0.0)	38(11.7)	124(38.3)	74(22.8)	35(10.8)	19(5.9)	16(4.9)	7(2.2)	7(2.2)	4(1.2)	324

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.13a: Diagnoses by ethnicity, men

Diagnosis	The Netherlands (%)	Turkey (%)	N.Africa/ Morocco (%)	Sur./Ant./ Aruba (%)	Sub-Sah. Africa (%)	Eastern Europe (%)	Latin America (%)	Asia (%)	Europe other (%)	Else (%)	Unknown (%)	Total
Gonorrhoea	960(78.4)	29(2.1)	35(2.5)	160(10.4)	21(1.5)	34(2.4)	37(2.6)	29(2.1)	27(1.9)	71(5.1)	1(0.1)	1404
Chlamydia	2918(74.7)	43(1.1)	79(2.0)	414(10.6)	79(2.0)	40(1.0)	71(1.8)	71(1.8)	68(1.7)	115(2.9)	10(0.3)	3908
Inf. syphilis*	386(74.7)	4(0.8)	10(1.9)	30(5.8)	4(0.8)	4(0.8)	18(3.5)	21(4.1)	6(1.2)	33(6.4)	1(0.2)	517
HIV+	177(67.6)	1(0.4)	5(1.9)	18(6.9)	12(4.6)	6(2.3)	14(5.3)	9(3.4)	6(2.3)	12(4.6)	2(0.8)	262
Genital warts	975(79.1)	17(1.4)	27(2.2)	67(5.4)	16(1.3)	20(1.6)	19(1.5)	19(1.5)	13(1.1)	57(4.6)	3(0.2)	1233
Genital herpes	262(75.5)	4(1.2)	1(0.3)	34(9.8)	6(1.7)	3(0.9)	8(2.3)	9(2.6)	0(0.0)	20(5.8)	0(0.0)	347

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.13b: Diagnoses by ethnicity, women

Diagnosis	The Netherlands (%)	Turkey (%)	N. Africa/ Moroccan (%)	Sur./Ant./ Aruba (%)	Sub-Sah. Africa (%)	Eastern Europe (%)	Latin America (%)	Asia (%)	Europe other (%)	Else (%)	Unknown (%)	Total
Gonorrhoea	248(58.6)	3(0.7)	5(1.2)	74(17.5)	4(0.9)	27(6.4)	5(1.2)	6(1.4)	41(9.7)	10(2.4)	0(0.0)	423
Chlamydia	3143(80.7)	11(0.3)	24(0.6)	307(7.9)	45(1.2)	86(2.2)	42(1.1)	74(1.9)	102(2.6)	53(1.4)	6(0.2)	3893
Inf. syphilis*	20(47.6)	0(0.0)	2(4.8)	3(7.2)	2(4.8)	6(14.3)	3(7.1)	0(0.0)	5(11.9)	1(2.4)	0(0.0)	42
HIV+	8(18.2)	0(0.0)	0(0.0)	7(15.9)	24(54.5)	0(0.0)	1(2.3)	0(0.0)	1(2.3)	3(6.8)	0(0.0)	44
Genital warts	701(84.7)	7(0.8)	5(0.6)	29(3.5)	6(0.7)	17(2.1)	9(1.1)	4(0.5)	22(2.7)	18(2.2)	4(0.5)	828
Genital herpes	250(77.2)	1(0.3)	4(1.2)	29(8.9)	1(0.3)	19(5.9)	3(0.9)	0(0.0)	3(0.9)	12(3.7)	2(0.0)	324

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.14: Diagnoses by sexual preference, men

Diagnosis	Heterosexual (%)	MSM (%)	Unknown (%)	Total
Gonorrhoea	435(31.0)	964(68.8)	3(0.2)	1404
Chlamydia	2811(72.0)	1093(28.0)	2(0.1)	3908
Infectious syphilis*	53(10.3)	463(89.6)	1(0.1)	517
HIV+	25(9.6)	235(90.4)	0(0.0)	262
Genital warts	832(67.5)	398(32.3)	3(0.2)	1233
Genital herpes	219(63.1)	127(36.6)	1(0.3)	347

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.15a: Diagnoses by client of CSW, men

Diagnosis	No	Yes, in past 6 months	Unknown	Total
Gonorrhoea	1324(94.4)	66(4.7)	12(0.9)	1404
Chlamydia	3678(94.2)	187(4.8)	41(1.0)	3908
Infectious syphilis*	499(96.5)	11(2.1)	7(1.4)	517
HIV+	252(96.9)	5(1.9)	3(1.2)	262
Genital warts	1156(93.8)	65(5.3)	12(1.0)	1233
Genital herpes	325(93.7)	22(6.3)	0(0.0)	347

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.15b: Diagnoses by CSW, women

Diagnosis	No	Yes, in past 6 months	Unknown	Total
Gonorrhoea	337(79.7)	84(19.9)	2(0.5)	423
Chlamydia	3617(92.9)	246(6.3)	30(0.8)	3893
Infectious syphilis*	30(71.4)	12(28.6)	0(0.0)	42
HIV+	37(84.1)	7(15.9)	0(0.0)	44
Genital warts	766(92.5)	57(6.9)	5(0.6)	828
Genital herpes	304(93.8)	18(5.6)	2(0.6)	324

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.16: Diagnoses by injecting drug use

Diagnosis	No	Yes, ever	Yes, in past 6 months	Unknown	Total
Gonorrhoea	1760(96.4)	2(0.1)	1(0.1)	62(3.4)	1825
Chlamydia	7512(96.3)	13(0.2)	14(0.2)	260(3.3)	7799
Infectious syphilis*	531(95.0)	1(0.2)	2(0.4)	25(4.5)	559
HIV+	289(95.1)	1(0.3)	2(0.7)	12(3.9)	304
Genital warts	1950(94.6)	3(0.1)	1(0.0)	107(5.2)	2061
Genital herpes	652(97.2)	0(0.0)	0(0.0)	19(2.8)	671

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.17: Diagnoses by previous HIV test

Diagnosis	No	Yes, positive	Yes, negative	Yes, result unknown	Unknown	Total
Gonorrhoea	557(30.5)	263(14.4)	963(52.8)	15(0.8)	27(1.5)	1825
Chlamydia	4250(54.5)	260(3.3)	3133(40.2)	31(0.4)	125(1.6)	7799
Infectious syphilis*	115(20.6)	173(30.9)	255(45.6)	6(1.1)	10(1.8)	559
HIV+	101(33.2)	0(0.0)	188(61.8)	6(2.0)	9(3.0)	304
Genital warts	875(42.5)	81(3.9)	1057(51.3)	12(0.6)	36(1.7)	2061
Genital herpes	258(38.5)	60(8.9)	332(49.5)	8(1.2)	13(1.9)	671

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.18a: Diagnoses by previous GO/CT/Lues in anamnesis, men (GGD Amsterdam is missing)

Diagnosis	Yes	No	Don't know	Unknown	Total
Gonorrhoea	258(36.0)	439(61.3)	4(0.6)	15(2.1)	716
Chlamydia	434(17.4)	1952(78.5)	23(0.9)	79(3.2)	2488
Infectious syphilis*	101(34.0)	191(64.3)	2(0.7)	3(1.0)	297
HIV+	49(38.6)	70(55.1)	2(1.6)	6(4.7)	127
Genital warts	98(14.5)	554(82.0)	4(0.6)	20(3.0)	676
Genital herpes	27(20.8)	97(74.6)	1(0.8)	5(0.8)	130

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.18b: Diagnoses by previous GO/CT/Lues in anamnesis, women (GGD Amsterdam is missing)

Diagnosis	Yes	No	Don't know	Unknown	Total
Gonorrhoea	66(24.5)	193(71.7)	1(0.4)	9(3.3)	269
Chlamydia	377(13.4)	2340(83.4)	19(0.7)	70(2.5)	2806
Infectious syphilis*	3(10.0)	25(83.3)	0(0.0)	2(6.7)	30
HIV+	2(13.3)	13(86.7)	0(0.0)	0(0.0)	15
Genital warts	82(14.9)	453(82.1)	0(0.0)	17(3.1)	552
Genital herpes	15(10.1)	131(87.9)	1(0.7)	2(1.3)	149

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.19a: Number of tests and percentage of positive tests by age, heterosexual men

Age (years)	HIV		Gonorrhoea		Chlamydia		Infectious syphilis*	
	Tests	% pos.	Tests	% pos.	Tests	% pos.	Tests	% pos.
0-14	8	0	12	0	12	0	12	0
15-19	995	0	1239	2.3	1241	13.9	1232	0
20-24	7063	0	8166	1.5	8164	13.5	8119	0
25-29	6033	0.1	6758	1.5	6762	11.0	6717	0.1
30-34	3615	0.1	3997	1.4	3995	8.3	3961	0.4
35-39	2632	0.2	3003	1.6	3005	6.6	2970	0.2
40-44	1752	0.3	2043	1.4	2043	6.0	2023	0.2
45-49	1195	0	1384	1.5	1384	5.3	1371	0.5
50-54	688	0.1	803	1.9	803	4.4	797	0.6
55 >	764	0.3	910	1.3	908	3.5	902	1.0
Total	24746	0.1	28315	1.5	28317	9.9	28104	0.2

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.19b: Number of tests and percentage of positive tests by age, MSM

Age (years)	HIV		Gonorrhoea		Chlamydia		Infectious syphilis*	
	Tests	% pos.	Tests	% pos.	Tests	% pos.	Tests	% pos.
0-14	3	0	3	0	3	0	3	0
15-19	292	1.4	297	5.4	297	7.4	310	1.0
20-24	1104	2.1	1167	7.2	1165	9.3	1181	2.0
25-29	1318	3.1	1511	11.1	1511	10.1	1515	3.3
30-34	1213	2.5	1524	10.5	1524	12.4	1529	4.3
35-39	1266	4.1	1725	11.0	1723	11.1	1729	5.1
40-44	1192	2.8	1743	9.1	1744	10.1	1743	5.0
45-49	807	3.1	1226	7.4	1227	10.1	1224	5.9
50-54	498	2.6	692	8.1	694	9.2	693	5.9
55 >	688	2.0	897	4.7	895	7.2	892	3.5
Total	8381	2.8	10785	8.9	10783	10.1	10819	4.3

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.19c: Number of tests and percentage of positive tests by age, women

Age (years)	HIV		Gonorrhoea		Chlamydia		Infectious syphilis*	
	Tests	% pos.	Tests	% pos.	Tests	% pos.	Tests	% pos.
0-14	36	0	53	5.7	53	9.4	51	0
15-19	3866	0.0	4853	1.9	4861	16.6	4791	0
20-24	13462	0.1	15633	1.2	15672	12.2	15532	0
25-29	7257	0.1	8193	0.8	8213	8.6	8116	0.1
30-34	3035	0.3	3352	0.9	3352	5.5	3322	0.3
35-39	1992	0.4	2239	1.0	2242	5.1	2216	0.1
40-44	1340	0.3	1510	0.6	1509	3.7	1479	0.5
45-49	979	0.3	1084	1.0	1083	5.1	1070	0.1
50-54	493	0.0	545	0.9	546	5.3	543	0.6
>55	280	0.4	314	0.3	314	6.1	311	1.0
Total	32740	0.1	37776	1.1	37845	10.3	37431	0.1

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.20a: Diagnoses in young heterosexual men

Diagnosis	16-17 (%)	18-19 (%)	20-21 (%)	22-24 (%)	Total
Gonorrhoea	5(12.2)	24(12.8)	37(7.2)	89(8.9)	155
Chlamydia	35(85.4)	134(71.7)	397(77.5)	706(70.4)	1272
Infectious syphilis*	0(0.0)	0(0.0)	0(0.0)	2(0.2)	2
HIV+	0(0.0)	0(0.0)	1(0.2)	2(0.2)	3
Genital warts	0(0.0)	26(13.9)	59(11.5)	173(17.2)	258
Genital herpes	1(2.4)	3(1.6)	18(3.5)	31(3.1)	53
Total	41	187	512	1003	1743

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.20b: Diagnoses in young MSM

Diagnosis	16-17 (%)	18-19 (%)	20-21 (%)	22-24 (%)	Total
Gonorrhoea	2(22.2)	13(30.2)	26(30.2)	58(29.1)	99
Chlamydia	6(66.7)	15(34.9)	34(39.5)	74(37.2)	129
Infectious syphilis*	0(0.0)	3(7.0)	8(9.3)	16(8.0)	27
HIV+	0(0.0)	4(9.3)	8(9.3)	15(7.5)	27
Genital warts	1(11.1)	8(18.6)	9(10.5)	32(16.1)	50
Genital herpes	0(0.0)	0(0.0)	1(1.2)	4(2.0)	5
Total	9	43	86	199	337

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.20c: Diagnoses in young women

Diagnosis	16-17 (%)	18-19 (%)	20-21 (%)	22-24 (%)	Total
Gonorrhoea	23(9.0)	67(8.7)	87(7.4)	100(7.0)	277
Chlamydia	194(75.8)	596(77.4)	872(74.2)	1046(72.7)	2708
Infectious syphilis*	0(0.0)	1(0.1)	2(0.2)	5(0.3)	8
HIV+	0(0.0)	2(0.3)	1(0.1)	6(0.4)	9
Genital warts	28(10.9)	77(10.0)	160(13.6)	210(14.6)	475
Genital herpes	11(4.3)	27(3.5)	53(4.5)	71(4.9)	162
Total	256	770	1175	1438	3639

* Infectious syphilis includes Lues I, Lues II and Lues latens recens

Table A.21a: Ethnicity in young men (<25 years) by STI

Ethnicity	Gonorrhoea (%)	Chlamydia (%)	Genital warts (%)	Genital herpes (%)
The Netherlands	119(46.5)	1019(72.4)	237(76.7)	42(72.4)
Turkey	9(3.5)	16(1.1)	3(1.0)	0(0.0)
N. Africa/Morocco	17(6.6)	36(2.6)	9(2.9)	0(0.0)
Surinam/Neth. Antilles	69(26.9)	196(13.7)	27(8.8)	9(15.5)
Eastern Europe	11(4.3)	14(1.0)	7(2.3)	0(0.0)
Sub-Saharan Africa	7(2.7)	35(2.5)	6(1.9)	2(3.4)
Latin America	5(2.0)	23(1.6)	5(1.6)	0(0.0)
Europe else	6(2.3)	25(1.8)	2(0.6)	0(0.0)
Asia	6(2.3)	20(1.4)	3(1.0)	2(3.4)
Unknown	1(0.4)	3(0.2)	2(0.6)	0(0.0)
Else	6(2.3)	22(1.6)	8(2.6)	3(5.2)
Total	256	1409	309	58

Table A.21b: Ethnicity in young women (<25 years) by STI

Ethnicity	Gonorrhoea (%)	Chlamydia (%)	Genital warts (%)	Genital herpes (%)
The Netherlands	160(56.9)	2259(82.7)	406(84.9)	126(77.8)
Turkey	2(0.7)	5(0.2)	4(0.8)	1(0.6)
N. Africa/Morocco	3(1.1)	18(0.7)	4(0.8)	1(0.6)
Surinam/Neth. Antilles	60(21.4)	220(8.1)	25(5.3)	18(11.1)
Eastern Europe	17(6.0)	65(2.4)	10(2.1)	10(6.2)
Sub-Saharan Africa	2(0.7)	31(1.1)	3(0.6)	0(0.0)
Latin America	3(1.1)	15(0.5)	4(0.8)	0(0.0)
Europe else	26(9.3)	62(2.3)	6(1.3)	1(0.6)
Asia	3(1.1)	29(1.1)	5(1.0)	1(0.6)
Unknown	0(0.0)	6(0.2)	3(0.6)	0(0.0)
Else	5(1.8)	20(0.7)	8(1.7)	4(2.5)
Total	281	2730	478	162

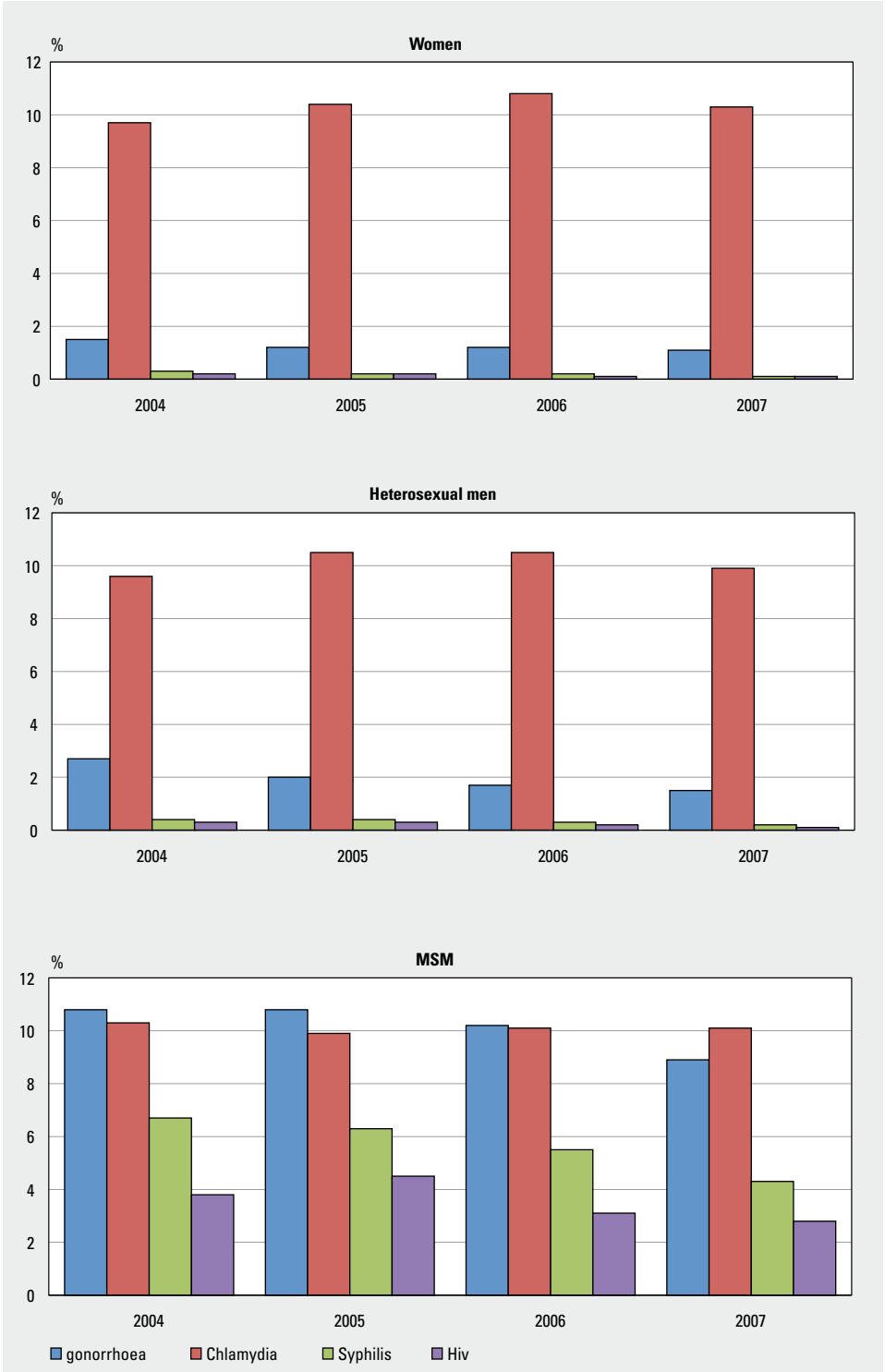

Figure A.1 Positivity rates by gender and sexual preference, national STI surveillance network, 2004-2007

APPENDIX B.
TABLES AND FIGURES HIV AND AIDS SURVEILLANCE

HIV cases (total population)

Table B.1: Number of HIV cases, by region and sex

Region	Men (%)	Women (%)	Total (%)
Amsterdam	4812 (44%)	1019 (33%)	5831 (42%)
North	697 (6%)	232 (7%)	929 (7%)
East	871 (8%)	242 (8%)	1113 (8%)
South	1068 (10%)	403 (13%)	1471 (10%)
West	3449 (32%)	1226 (39%)	4675 (33%)
Total	10897	3122	14019

Table B.2: Number of HIV cases, by sex and transmission risk group

Transmission risk group	Men (%)	Women (%)	Total (%)
MSM	7480 (69%)	0 (0%)	7480 (53%)
Heterosexual contact	1937 (18%)	2637 (84%)	4574 (33%)
IDU	478 (4%)	175 (6%)	653 (5%)
Blood (products)	118 (1%)	63 (2%)	181 (1%)
Mother to child	83 (1%)	72 (2%)	155 (1%)
Needle stick injury	23 (0.2%)	7 (0.2%)	30 (0.2%)
Other/NK	778 (7%)	168 (5%)	946 (7%)
Total	10897	3122	14019

NK: not known

Table B.3: Number of HIV cases, by sex and region of origin

Region of origin	Men (%)	Women (%)	Total (%)
The Netherlands	7013 (64%)	880 (28%)	7893 (56%)
Western Europe	767 (7%)	166 (5%)	933 (7%)
Central Europe	162 (1%)	36 (1%)	198 (1%)
Eastern Europe	59 (0.5%)	16 (0.5%)	75 (0.5%)
Sub-Saharan Africa	1043 (10%)	1399 (45%)	2442 (17%)
Caribbean	349 (3%)	160 (5%)	509 (4%)
Latin America	750 (7%)	256 (8%)	1006 (7%)
North America	194 (2%)	8 (0.3%)	202 (1%)
North Africa & Middle East	139 (1%)	32 (1%)	171 (1%)
Australia & New Zealand	31 (0.3%)	1 (0.03%)	32 (0.2%)
Oceania & Pacific	34 (0.3%)	6 (0.2%)	40 (0.3%)
South (East) Asia	292 (3%)	157 (5%)	449 (3%)
NK	64 (0.6%)	5 (0.2%)	69 (0.5%)
Total	10897	3122	14019

NK: not known

Table B.4: Number of HIV cases, by transmission risk group and region of origin

Region of origin	MSM (%)	Heterosexual contact (%)	IDU (%)
The Netherlands	5476 (73%)	1368 (30%)	416 (64%)
Western Europe	577 (8%)	147 (3%)	121 (19%)
Central Europe	83 (1%)	74 (2%)	13 (2%)
Eastern Europe	35 (0.5%)	20 (0.4%)	13 (2%)
Sub-Saharan Africa	98 (1%)	2001 (44%)	7 (1%)
Caribbean	209 (3%)	250 (5%)	11 (2%)
Latin America	483 (6%)	428 (9%)	24 (4%)
North America	173 (2%)	7 (0.2%)	6 (1%)
North Africa & Middle East	50 (0.7%)	71 (2%)	19 (3%)
Australia & Pacific	24 (0.3%)	2 (0.1%)	1 (0.2%)
South (East) Asia	2051 (3%)	189 (4%)	14 (2%)
NK	42 (0.6%)	7 (0.2%)	7 (1%)
Total	7480	4574	653

NK: not known

MSM: men having sex with men; IDU: injecting drug user

Table B.5: Number of HIV cases, by age group and sex

Age group	Men (%)	Women (%)	Total (%)
<15	108 (1%)	84 (3%)	192 (1%)
15-19	139 (1%)	219 (7%)	358 (3%)
20-24	762 (7%)	503 (16%)	1265 (9%)
25-29	1587 (15%)	718 (23%)	2305 (16%)
30-39	4391 (40%)	1068 (34%)	5459 (39%)
40-49	2639 (24%)	353 (11%)	2992 (21%)
≥ 50	1269 (12%)	176 (6%)	1445 (10%)
NK	2 (0.02%)	1 (0.03%)	3 (0.02%)
Total	10897	3122	14019

NK: not known

Table B.6: Number of HIV cases, by transmission risk group and age group

Age group	MSM	Heterosexual contact	IDU	Blood (prod.)	Mother to child	Needle stick injury	Other/NK	Total
<15	1 (0.01%)	4 (0.1%)	0 (0%)	22 (12%)	152 (98%)	0 (0%)	13 (1%)	192 (1%)
15-19	60 (0.8%)	233 (5%)	17 (3%)	14 (8%)	1 (0.7%)	0 (0%)	33 (3%)	358 (3%)
20-24	521 (7%)	564 (12%)	87 (13%)	18 (10%)	0 (0%)	2 (7%)	73 (8%)	1265 (9%)
25-29	1140 (15%)	861 (19%)	126 (19%)	31 (17%)	0 (0%)	2 (7%)	145 (15%)	2205 (16%)
30-39	3078 (41%)	1704 (37%)	280 (43%)	58 (32%)	0 (0%)	8 (27%)	331 (35%)	5459 (39%)
40-49	1848 (25%)	770 (17%)	129 (20%)	16 (9%)	0 (0%)	9 (30%)	221 (23%)	2992 (21%)
≥ 50	832 (11%)	437 (10%)	14 (2%)	23 (13%)	0 (0%)	9 (30%)	130 (14%)	1445 (10%)
NK	0 (0%)	1 (0.02%)	0 (0%)	0 (0%)	2 (1%)	0 (0%)	0 (0%)	0 (0%)
Total	7480	4574	653	181	155	30	946	14019

NK: not known

Table B.7: Median age (years) of HIV cases, by region of origin and sex

Region of origin	Male (age/IQR)	Female (age/IQR)	Total (age/IQR)
The Netherlands	38.0 (31.6-45.4)	31.8 (25.3-41.7)	37.5 (30.9-45.1)
Western Europe	33.7 (28.7-40.6)	30.7 (26.5-36.1)	33.1 (28.2-40.0)
Sub-Saharan Africa	33.4 (27.3-38.5)	29.0 (23.9-34.3)	30.8 (25.0-36.5)
Caribbean	33.4 (28.7-39.8)	31.3 (24.4-39.4)	32.6 (27.0-39.5)
Latin America	33.9 (28.5-40.3)	31.0 (26.5-38.1)	33.3 (27.8-39.8)
South (East) Asia	35.8 (28.8-42.4)	31.4 (27.9-35.7)	33.4 (28.5-40.2)

IQR: interquartile range

Table B.8: Number of HIV cases, by region and transmission risk group

Transmission risk group	Amsterdam	North	East	South	West	Total
MSM	3659 (49%)	443(6%)	589 (8%)	681 (9%)	2108 (28%)	7480 (53%)
Heterosexual contact	1394 (30%)	377 (8%)	399 (9%)	582 (13%)	1822 (40%)	4574 (33%)
IDU	297(45%)	42 (6%)	33 (5%)	108 (17%)	173 (26%)	653 (5%)
Blood (products)	47 (26%)	10 (5%)	10 (6%)	11 (6%)	103 (57%)	181 (1%)
Mother to child	50 (33%)	7 (5%)	0 (0%)	1 (0.7%)	97 (63%)	155 (1%)
Needle stick injury	15 (50%)	0 (0%)	6 (20%)	2 (7%)	7 (23%)	30 (0.2%)
Other/NK	369 (39%)	50 (5%)	76 (8%)	86 (9%)	365 (39%)	946 (7%)
Total	5831	929	1113	1471	4675	14019

NK: not known

Table B.9: Number of HIV cases, by year of diagnosis and transmission risk group

	≤1999	2000	2001	2002	2003	2004	2005	2006	2007
MSM	3552 (57%)	353 (44%)	417 (45%)	450 (45%)	440 (43%)	539 (49%)	589 (52%)	579 (60%)	561 (65%)
Heterosexual contact	1514 (24%)	366 (46%)	396 (43%)	425 (43%)	445 (44%)	435 (40%)	436 (38%)	314 (32%)	245 (28%)
IDU	538 (9%)	16 (2%)	19 (2%)	15 (2%)	22 (2%)	13 (1%)	14 (1%)	11 (1.0%)	5 (0.6%)
Blood (products)	131 (2%)	6 (0.8%)	9 (1%)	11 (1%)	10 (1.0%)	4 (0.4%)	4 (0.4%)	4 (0.4%)	2 (0.2%)
Mother to child	67 (1%)	13 (2%)	19 (2%)	14 (1%)	20 (2%)	12 (1%)	7 (0.6%)	3 (0.3%)	0 (0%)
Needle stick injury	11 (0.2%)	1 (0.1%)	1 (0.1%)	5 (0.5%)	2 (0.2%)	3 (0.3%)	4 (0.4%)	3 (0.3%)	0 (0%)
Other/NK	388 (6%)	50 (6%)	65 (7%)	75 (8%)	84 (8%)	95 (9%)	78 (7%)	60 (6%)	51 (6%)
Total	6201	805	926	995	1023	1101	1132	972	864

NK: not known

Table B.10: Number of HIV cases, by region of origin and transmission risk group

Transmission risk group	The Netherlands	Sub-Saharan Africa	Surinam	Neth. Antilles/ Aruba	Western Europe
MSM	5476 (69%)	98 (4%)	210 (34%)	174 (42%)	577 (62%)
Heterosexual contact	1368 (17%)	2001 (82%)	344 (56%)	196 (48%)	147 (16%)
IDU	416 (5%)	7 (0.3%)	21 (3%)	11 (3%)	121 (13%)
Blood (products)	89 (1%)	54 (2%)	6 (1%)	2 (0.5%)	5 (0.5%)
Mother to child	96 (1%)	43 (2%)	1 (0.2%)	2 (0.5%)	3 (0.3%)
Needle stick injury	21 (0.3%)	4 (0.2%)	0 (0%)	1 (0.3%)	2 (0.2%)
Other/NK	427 (5%)	235 (10%)	36 (6%)	25 (6%)	78 (8%)
Total	7893	2442	618	411	933

NK: not known

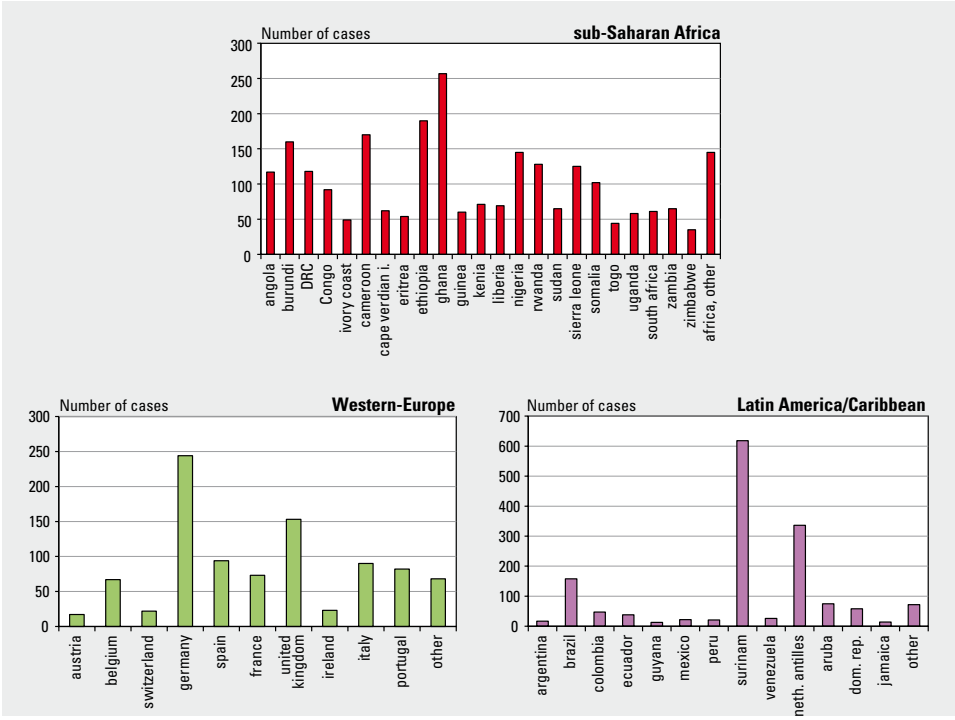

Figure B.1: Number of HIV cases, by sub-Saharan African Country, by West-European country, and by Latin American/Caribbean country

HIV cases diagnosed in 2007

Table B.11: Number of HIV cases diagnosed in 2007, by region and sex

Region	Men (%)	Women (%)	Total (%)
Amsterdam	277 (39%)	59 (39%)	336 (39%)
North	62 (9%)	9 (6%)	71 (8%)
East	60 (8%)	15 (10%)	75 (9%)
South	74 (10%)	12 (8%)	86 (10%)
West	238 (33%)	58 (38%)	296 (34%)
Total	711	153	864

Table B.12: Number of HIV cases diagnosed in 2007, by sex and transmission risk group

Transmission risk group	Men (%)	Women (%)	Total (%)
MSM	561 (79%)	0 (0%)	561 (65%)
Heterosexual contact	105 (15%)	140 (92%)	245 (28%)
IDU	4 (0.6%)	1 (0.7%)	5 (0.6%)
Blood (products)	1 (0.1%)	1 (0.7%)	2 (0.2%)
Mother to child	0 (0%)	0 (0%)	0 (0%)
Needle stick injury	0 (0%)	0 (0%)	0 (0%)
Other/NK	40 (6%)	11 (7%)	51 (6%)
Total	711	153	864

NK: not known

Table B.13: Number of HIV cases diagnosed in 2007, by sex and region of origin

Region of origin	Men (%)	Women (%)	Total (%)
The Netherlands	511 (72%)	41 (27%)	552 (64%)
Western Europe	34 (5%)	4 (3%)	38 (4%)
Central Europe	12 (2%)	1 (0.7%)	1 (0.7%)
Eastern Europe	4 (0.6%)	0 (0%)	6 (0.7%)
Sub-Saharan Africa	41 (6%)	81 (53%)	133 (15%)
Caribbean	21 (3%)	2 (1%)	23 (3%)
Latin America	52 (7%)	15 (10%)	67 (8%)
North America	6 (0.8%)	0 (0%)	6 (0.7%)
North Africa & Middle East	15 (2%)	0 (0%)	15 (2%)
Australia & New Zealand	0 (0%)	0 (0%)	0 (0%)
Oceania & Pacific	1 (0.1%)	0 (0%)	1 (0.1%)
South (East) Asia	13 (2%)	7 (5%)	20 (2%)
Total	711	153	864

Table B.14: Number of HIV cases diagnosed in 2007, by transmission risk group and region of origin

Region of origin	MSM (%)	Heterosexual men (%)	Heterosexual women (%)
The Netherlands	438 (78%)	47 (45%)	35 (25%)
Western Europe	27 (5%)	5 (5%)	1 (0.7%)
Central Europe	8 (1%)	4 (4%)	1 (0.7%)
Eastern Europe	4 (0.7%)	0 (0%)	2 (1%)
Sub-Saharan Africa	8 (1%)	26 (25%)	79 (56%)
Caribbean	15 (3%)	4 (4%)	2 (1%)
Latin America	37 (7%)	13 (13%)	14 (10%)
North America	6 (1%)	0 (0%)	0 (0%)
North Africa & Middle East	5 (0.9%)	5 (5%)	0 (0%)
Australia & Pacific	0 (0%)	0 (0%)	0 (0%)
South (East) Asia	11 (2%)	1 (1%)	7 (5%)
Total	561	105	140

Footnote: MSM: men having sex with men

Table B.15: Number of HIV cases diagnosed in 2007, by transmission risk group and age group

Age group	MSM	Hetero sexual contact	IDU	Blood (products)	Mother to child	Needle stick injury	NK	Total
<15	1 (0.2%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.1%)
15-19	4 (0.8%)	3 (1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7 (0.8%)
20-24	31 (5%)	25 (10%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (7%)	60 (7%)
25-29	66 (12%)	36 (15%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	107 (12%)
30-39	205 (37%)	79 (32%)	2 (40%)	1 (50%)	0 (0%)	0 (0%)	5 (36%)	298 (34%)
40-49	162 (29%)	67 (27%)	2 (40%)	0 (0%)	0 (0%)	0 (0%)	7 (50%)	253 (29%)
≥ 50	92 (16%)	35 (14%)	1 (20%)	1 (50%)	0 (0%)	0 (0%)	1 (7%)	138 (16%)
Total	561	245	5	2	0	0	14	864

Table B.16: Number of HIV cases diagnosed in 2007, by age group and sex

Age group	Men (%)	Women (%)	Total (%)
<15	1 (0.1%)	0 (0%)	1 (0.1%)
15-19	4 (0.6%)	3 (2%)	7 (0.8%)
20-24	40 (6%)	20 (13%)	60 (7%)
25-29	78 (11%)	29 (19%)	107 (12%)
30-39	247 (35%)	51 (33%)	298 (34%)
40-49	217 (31%)	36 (24%)	253 (29%)
≥ 50	124 (17%)	14 (9%)	138 (16%)
Total	711	153	864

Table B.17: Median age (years) of HIV cases diagnosed in 2007, by region of origin and sex

Region of origin	Men (age/IQR)	Women (age/IQR)	Total (age/IQR)
The Netherlands	40.6 (33.7-47.9)	40.2 (29.1-50.5)	40.5 (33.4-48.2)
Western Europe	39.1 (34.2-48.8)	41.1 (36.1-47.8)	39.8 (34.2-48.8)
Sub-Saharan Africa	38.6 (28.8-40.8)	32.5 (27.7-39.4)	33.9 (28.0-39.9)
Caribbean	38.2 (35.2-45.0)	43.9 (28.3-59.5)	38.2 (35.2-45.1)
Latin America	36.9 (30.9-43.4)	33.9 (27.0-44.2)	36.2 (30.1-43.8)
South (East) Asia	28.8 (27.2-38.7)	35.7 (27.8-43.8)	32.9 (27.4-40.4)

IQR: interquartile range

AIDS cases and deaths among HIV patients

Table B.18: Number of AIDS diagnoses and deaths among HIV patients (cumulative, per year)

Year	AIDS diagnoses (Cumulative)	AIDS diagnoses (year)	Deaths (Cumulative)	Deaths (year)
1983	22	22	6	6
1984	53	31	22	16
1985	118	65	52	30
1986	255	137	115	63
1987	500	245	221	106
1988	825	325	356	135
1989	1216	391	558	202
1990	1635	419	827	269
1991	2085	450	1121	294
1992	2595	510	1533	412
1993	3076	481	1960	427
1994	3570	494	2404	444
1995	4103	533	2843	439
1996	4562	459	3170	327
1997	4899	337	3354	184
1998	5137	238	3492	136
1999	5366	229	3627	137
2000	5616	250	3759	132
2001	5877	261	3887	128
2002	6175	298	4011	124
2003	6466	291	4153	142
2004	6746	280	4296	143
2005	7077	331	4436	140
2006	7340	223	4545	109
2007	7515	263	4661	116

Source Deaths among HIV patients: <2002: Statistics Netherlands, CBS; ≥ 2002: data from HMF

< 1999: AIDS cases registered by Health Inspectorate, from 1999: data from the HMF

NA = not available

Table B.19: Number of AIDS patients, by year of AIDS diagnosis and transmission risk group

Year of diagnosis	MSM	Hetero-sexual contact	IDU	Blood (contacts)	Mother to child	NK/other	Total
≤ 87	424 (84%)	26 (5%)	28 (6%)	18 (4%)	3 (0.6%)	1 (0.2%)	500
1988	250 (77%)	18 (6%)	39 (12%)	13 (4%)	2 (0.6%)	3 (0.9%)	325
1989	305 (78%)	33 (8%)	36 (9%)	11 (3%)	1 (0.3%)	5 (1%)	391
1990	318 (76%)	34 (8%)	42 (10%)	17 (4%)	3 (0.7%)	5 (1%)	419
1991	335 (74%)	46 (10%)	43 (10%)	19 (4%)	2 (0.4%)	5 (1%)	450
1992	376 (74%)	51 (10%)	60 (12%)	12 (2%)	2 (0.4%)	9 (2%)	510
1993	317 (66%)	80 (17%)	61 (13%)	8 (2%)	3 (0.6%)	12 (2%)	481
1994	314 (64%)	94 (19%)	65 (13%)	14 (3%)	2 (0.4%)	5 (1%)	494
1995	314 (59%)	116 (22%)	74 (14%)	7 (1%)	9 (2%)	13 (2%)	533
1996	299 (65%)	95 (21%)	50 (11%)	5 (1%)	2 (0.4%)	8 (2%)	459
1997	174 (52%)	104 (31%)	43 (13%)	3 (1%)	2 (0.6%)	11 (3%)	337
1998	116 (49%)	78 (33%)	27 (11%)	1 (0.4%)	3 (1%)	13 (5%)	238
1999	119 (52%)	70 (31%)	10 (4%)	5 (2%)	5 (2%)	20 (9%)	229
2000	102 (41%)	104 (42%)	16 (6%)	4 (2%)	4 (2%)	20 (8%)	250
2001	103 (39%)	107 (41%)	10 (4%)	5 (2%)	6 (2%)	30 (11%)	261
2002	113 (38%)	138 (46%)	8 (3%)	4 (1%)	2 (0.7%)	33 (11%)	298
2003	118 (41%)	110 (38%)	14 (5%)	7 (2%)	6 (2%)	36 (12%)	291
2004	111 (40%)	111 (40%)	8 (3%)	3 (1%)	3 (1%)	44 (16%)	280
2005	143 (43%)	129 (39%)	20 (6%)	4 (1%)	1 (0.3%)	34 (10%)	331
2006	114 (43%)	101 (38%)	11 (4%)	2 (0.8%)	0 (0%)	36 (14%)	264
2007	89 (50%)	67 (37%)	7 (4%)	0 (0%)	0 (0%)	16 (9%)	179
Total	4554	1712	672	162	61	359	7515

< 1999: AIDS cases registered by Health Inspectorate, from 1999 to 2007: data from the HMF

Table B.20: Median age (years) of AIDS patients at AIDS diagnosis, by region of origin and sex

Region of origin	Men (age/IQR)	Women (age/IQR)	Total (age/IQR)
The Netherlands	41.2 (35.2-48.5)	36.2 (30.0-44.5)	40.8 (34.6-48.2)
Western Europe	38.6 (32.9-45.0)	35.0 (31.4-40.1)	38.0 (32.7-44.6)
Sub-Saharan Africa	34.2 (28.5-39.1)	31.7 (26.4-36.3)	32.8 (27.4-38.2)
Caribbean	37.0 (32.4-44.0)	38.1 (32.1-44.4)	37.5 (32.3-44.1)
Latin America	37.4 (32.7-42.8)	34.3 (29.0-43.3)	37.1 (32.0-42.9)
South (East) Asia	39.1 (32.4-46.5)	33.1 (28.4-37.4)	35.8 (31.2-43.6)

IQR: interquartile range

Table B.21: Number of deaths among HIV/AIDS patients, by sex

	Men (%)	Women (%)	Total
2002	104 (84%)	20 (16%)	124
2003	116 (82%)	26 (18%)	142
2004	124 (87%)	19 (13%)	143
2005	119 (85%)	21 (15%)	140
2006	90 (83%)	19 (17%)	109
2007	95 (82%)	21 (18%)	116

Source deaths among HIV/AIDS patients: HIV Monitoring foundation

*Table B.22: Number of death among HIV/AIDS patients **, by year of death, age group* and sex*

Age group	2003		2004		2005		2006		2007	
	M	F	M	F	M	F	M	F	M	F
<20=<2	1 (0.9%)	2 (8%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (1%)	0 (0%)	0 (0%)	0 (0%)
20-25 =3	0 (0%)	1 (4%)	1 (0.8%)	0 (0%)	0 (0%)	1 (5%)	1 (1%)	0 (0%)	3 (3%)	1 (5%)
25-30 =4	3 (3%)	1 (4%)	6 (5%)	0 (0%)	1 (1%)	3 (14%)	1 (1%)	0 (0%)	3 (3%)	2 (10%)
30-35 =5	10 (9%)	1 (4%)	16 (13%)	3 (16%)	9 (8%)	6 (29%)	3 (3%)	3 (16%)	10 (11%)	0 (0%)
35-40 =6	12 (10%)	2 (8%)	13 (10%)	2 (11%)	15 (13%)	1 (5%)	7 (8%)	3 (16%)	13 (14%)	3 (14%)
40-45 =7	11 (9%)	3 (12%)	13 (10%)	3 (16%)	18 (15%)	1 (5%)	3 (3%)	2 (11%)	7 (7%)	3 (14%)
45-50=8	8 (7%)	0 (0%)	15 (12%)	0 (0%)	14 (12%)	1 (5%)	9 (10%)	0 (0%)	6 (6%)	3 (14%)
50-55=9	11 (9%)	2 (8%)	10 (8%)	2 (11%)	7 (6%)	0 (0%)	8 (9%)	0 (0%)	6 (0%)	0 (0%)
55-60=10	9 (8%)	0 (0%)	7 (6%)	0 (0%)	8 (7%)	0 (0%)	2 (2%)	2 (11%)	3 (3%)	1 (5%)
>65=11	6 (5%)	2 (8%)	2 (2%)	1 (5%)	6 (5%)	2 (10%)	12 (13%)	0 (0%)	4 (4%)	0 (0%)
NK=99	45 (39%)	12 (46%)	41 (33%)	8 (42%)	41 (34%)	6 (29%)	43 (48%)	9 (47%)	40 (42%)	8 (38%)
Total	116	26	124	19	119	21	90	19	95	21

* age group at time of death, ** includes all causes of deaths

Source: HIV Monitoring Foundation

Table B.23: Number of HIV cases, by transmission risk group and known country of infection

Transmission risk group	Total number	Country of infection known (%)	Infected in the Netherlands (%)
MSM	7480	5584 (73%)	4885 (87%)
- Dutch	5476	4338 (79%)	4183 (96%)
- Non-Dutch	1963	1133 (58%)	690 (61%)
Heterosexual contact	4574	3257 (71%)	1426 (44%)
- Dutch	1368	1095 (80%)	868 (79%)
- Non-Dutch	3199	2161 (68%)	558 (26%)
IDU	653	537 (82%)	460 (86%)
- Dutch	416	372 (89%)	365 (98%)
- Non-Dutch	230	164 (71%)	94 (57%)
Blood (products)	211	198 (94%)	96 (48%)
- Dutch	110	101 (92%)	81 (80%)
- Non-Dutch	100	88 (88%)	14 (16%)

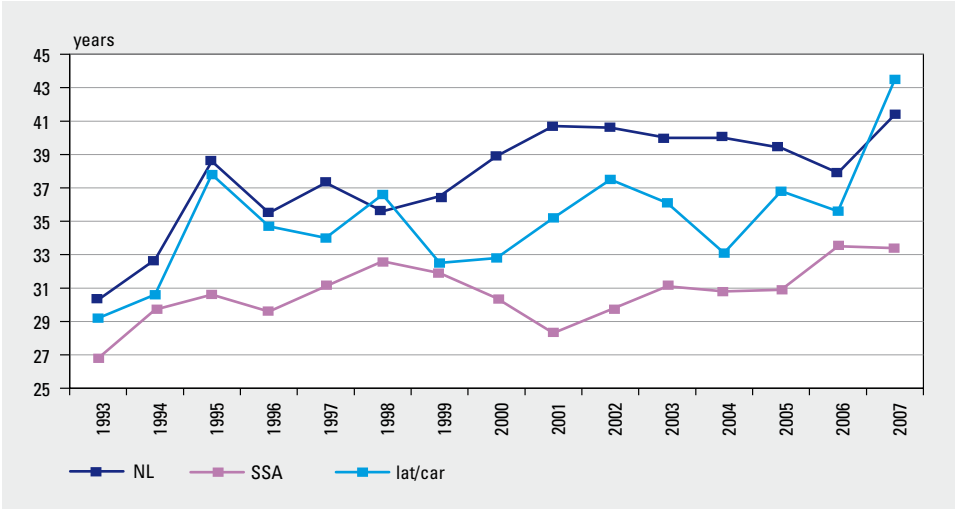

Figure B.2: Median age (at diagnosis) of heterosexual population over time, by geographic region; NL= Netherlands, SSA= sub-Saharan Africa, Lat/Car= Latin America and the Caribbean (Source: HMF)

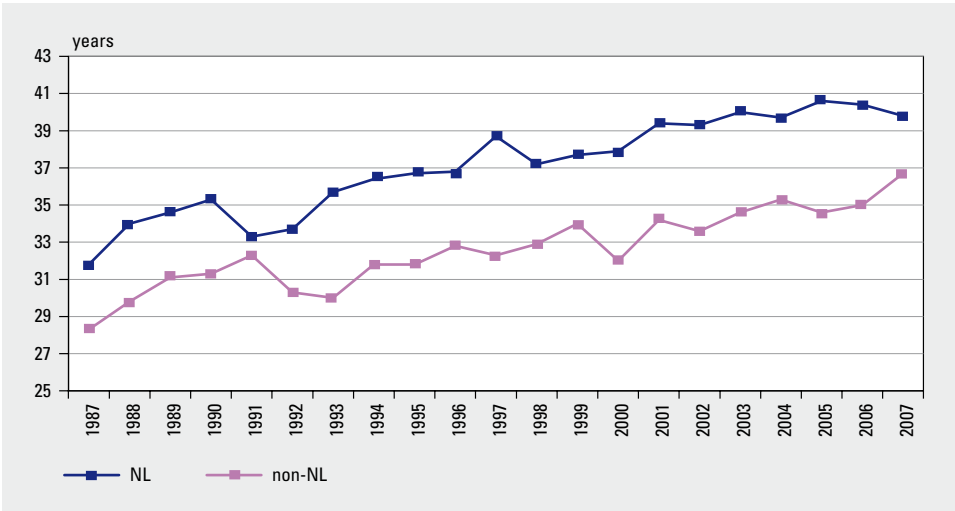

Figure B.3: Median age (at diagnosis) of MSM population over time, by ethnicity (Dutch/ non-Dutch)

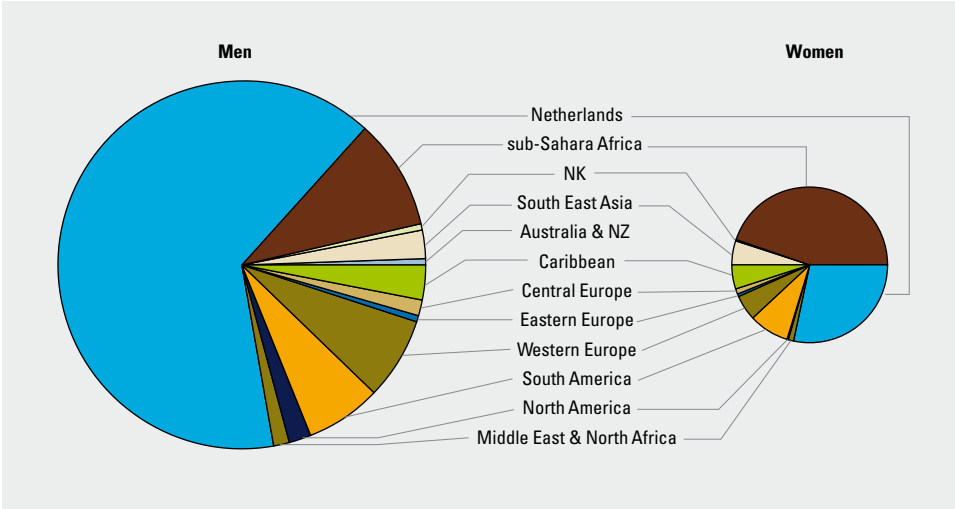

Figure B.4: Geographic distribution country of origin of HIV cases, by sex (men: left, women: right; source: HMF)

Table B.24: Summary of HIV/AIDS figures

Cumulative number of HIV cases [1]	14019
Male/female	10897/3122
Route of transmission [1]	
- MSM	7480 (53%)
- Heterosexual contact	4574 (33%)
- Injecting drug use	653 (5%)
- Blood (products)	181 (1%)
- Needle stick injury	30 (0.2%)
- Mother to child transmission	155 (1%)
- Other/ NK	946 (7%)
Newly diagnosed HIV cases (2007) [1]	864
Male/female	711/153
Route of transmission	
- MSM	561 (65%)
- Heterosexual contact	245 (28%)
- Injecting drug use	5 (0.6%)
- Blood (products)	2 (0.2%)
- Needle stick injury	0 (0%)
- Mother to child transmission	0 (0%)
- Other/NK	51 (6%)
Cumulative number of AIDS cases since epidemic began [2]	7515
Newly diagnosed AIDS cases in 2007	263
Cumulative number of deaths from HIV/AIDS since epidemic began	4661
Cumulative number of deaths from HIV/AIDS in 2007 [3]	116

* age at diagnosis; 1: data source: HMF, 2: data source AIDS cases < 2000: Health Inspectorate, data source AIDS cases ≥ 2000: HMF

3: data source: HMF

APPENDIX C.
NATIONAL SURVEILLANCE OF STI CENTRES

Coordinating STI centres	
GGD Amsterdam:	J.S.A.Fennema
H. Thiesbrummel	
GGD Den Haag:	P. van Leeuwen
GGD Groningen:	F. de Groot
GGD Hart voor Brabant:	J.C.A.M. van de Sande
	H. van Kruchten
	M. Overmars
GGD Nijmegen:	A. van Daal
	J. van Baars
	C. Vullings
GGD Rotterdam:	E. van der Veen
	O. de Zwart
	H. Götz
GGD Utrecht:	M. Langevoort
	C. Schout
	V. Sigurdsson
GGD Zuid Limburg:	C.J.P.A. Hoebe
Regional STI centres	
Erasmus MC:	W. van der Meijden
GGD Amstelland-de Meerlanden:	M. Siebbeles
GGD Drenthe:	G. Reitsema
GGD Eemland:	R. Heman
GGD Eindhoven:	R. Daemen
GGD Flevoland:	H. Fortuin
GGD Fryslan:	A. Strikwerda
GGD Gelre IJssel:	H. Bos
GGD Gooi en Vechtstreek:	R. Stumpel
GGD Hollands-Midden (Gouda):	K. Visser
GGD Hollands-Midden (Leiden):	B. Rump
GGD Kennemerland:	E. den Heijer
GGD Kop van Noord-Holland:	R. Hossen
GGD Midden-Nederland:	J. Ludding
GGD Noord en Midden Limburg:	C. Niesen
GGD Noord-Kennemerland:	F.A.N. Slijkerman Megelink
GGD Regio Noord Veluwe:	M. Hosseinia
GGD Regio Twente:	I. Schreurs
GGD Rivierenland:	P. Cornelissen
GGD West-Brabant:	H. Driessen
GGD Westfriesland:	A. Olijhoek
GGD IJssel-Vecht:	H. Bruins

GGD Zaanstreek-Waterland:	P. Degenaar
GGD Zeeland:	F. Jacobs
GGD Zuid-Holland Zuid:	H. van den Kerkhof
GGD Zuid-Hollandse Eilanden:	A. van Heukelum
GGD Zuidoost Brabant:	P. Tolsma
Hulpverlening Gelderland Midden:	S. Feenstra

Laboratories

Academisch Ziekenhuis Maastricht:	E. Stobberingh
Albert Schweitzer Ziekenhuis Dordrecht:	Frenay
Alysis zorggroep Arnhem:	C. van Meerendonk
Amphia Ziekenhuis Breda:	P. van Keulen
Atrium Medisch Centrum Heerlen:	J.H.T. Wagenvoort
Canisius Wilhelmina Ziekenhuis Nijmegen:	T. Simons
Centraal Bacteriologisch en Serologisch laboratorium Hilversum:	C.P. Timmerman
Diagnostisch Centrum Eindhoven:	L. Harms
Erasmus MC Rotterdam:	M. Schutte
GGD Amsterdam:	C. Signet
Gelre Ziekenhuizen Apeldoorn:	F.G.C. Heilman
Groene Hart Ziekenhuis Gouda:	F.C. van der Geest
Isala klinieken Zwolle:	P. van de Goor
Jeroen Bosch Ziekenhuis 's Hertogenbosch:	P. Schneeberger
Laboratoria voor de Pathologische Anatomie en Medische Microbiologie Velhoven:	A. Jansz
Laboratorium Microbiologie Twente-Achterhoek Enschede:	J. Spaargaren
Laboratorium voor de Volksgezondheid in Friesland Leeuwarden:	J. van Zeijl
Laurentius Ziekenhuis Roermond:	F. Stals
Leiden Universitair Medisch Centrum:	A.C.M. Kroes
MC Haaglanden Den Haag:	C.J. Jansen
Meander Medisch Centrum Amersfoort:	H. Schreuder
Medisch Centrum Alkmaar:	J. Sloos
Ruwaard van Putten Ziekenhuis Spijkenisse:	H. van Ingen
Slingeland Ziekenhuis Doetinchem:	R. Bosboom
Streeklaboratorium Haarlem:	F. Lamie
Streeklaboratorium Haarlem:	D. Veenendaal
Streeklaboratorium van de Volksgezondheid Deventer:	F.W. Sebens
Streeklaboratorium voor de Volksgezondheid Groningen:	B.P. Overbeek
Streeklaboratorium Zeeland Goes:	L. Sabbe
Universitair Medisch Centrum Utrecht:	.V. van Marken
VieCuri Venlo:	T. Trienekens
Vlietland Ziekenhuis Schiedam:	B. Moffie
Zaans Medisch Centrum Zaandam:	C. Fijen
Zeeuws-Vlaanderen, Ziekenhuis Terneuzen:	W. Westphaal

APPENDIX D
HIV MONITORING FOUNDATION

Within the framework of the HIV Monitoring Foundation, a substantial number of professionals are participating:

Treating physicians (*Site coordinating physicians)

- Dr. W. Bronsveld*, Drs. M.E. Hillebrand-Haverkort, *Medisch Centrum Alkmaar*
- Dr. J.M. Prins*, Dr. J. Branger, Dr. J.K.M. Eeftinck-Schattenkerk, Dr. S.E. Geerlings, Dr. M.H. Godfried, Drs. E.D. Kerver, Prof.dr. J.M.A. Lange, Dr. K.D. Lettinga, Dr. J.T.M. van der Meer, Dr. F.J.B. Nellen, Drs. D.P. Olszyna, Dr. T. van der Poll, Prof dr. P. Reiss, Drs. Th.A. Ruys, Drs. R. Steingrover, Drs. M. van der Valk, Drs. J.N. Vermeulen, Drs. S.M.E. Vrouenraets, Dr. M. van Vugt, Dr. F.W.M.N. Wit, *Academisch Medisch Centrum bij de Universiteit van Amsterdam*
- Prof. dr. T.W. Kuijpers, Drs. D. Pajkrt, Dr. H.J. Scherpbier, *Emma Kinderziekenhuis-AMC, Amsterdam*
- Dr. A. van Eeden, *St. Medisch Centrum Jan van Goyen, Amsterdam*
- Prof. dr. K. Brinkman*, Drs. G.E.L. van den Berk, Dr. W.L. Blok, Dr. P.H.J. Frissen, Drs. W.E.M. Schouten, *Onze Lieve Vrouwe Gasthuis, Amsterdam*
- Dr. J.W. Mulder*, Dr. E.C.M. van Gorp, Dr. J. Wagenaar, *Slotervaart Ziekenhuis, Amsterdam*
- Dr. J. Veenstra*, Dr. W.L.E. Vasmel, *St. Lucas Andreas Ziekenhuis, Amsterdam*
- Prof. Dr. S.A. Danner*, Dr. M.A. Van Agtmael, DRS. W.F.W. Bierman, Drs. F.A.P. Claessen, Dr. R.M. Perenboom, Drs. A. Rijkeboer, Drs. M.G.A. van Vonderen, *VU Medisch Centrum, Amsterdam*
- Dr. C. Richter*, Drs. J. van der Berg, Dr. E.H. Gisolf, *Ziekenhuis Rijnstate, Arnhem*
- Dr. R. Vriesendorp*, Dr.F.J.F. Jeurissen, *Medisch Centrum Haaglanden, locatie Westeinde, Den Haag*
- Dr. R.H. Kauffmann*, Drs. K. Pogány, *Haga Ziekenhuis, locatie Leyenburg, Den Haag*
- Dr. B. Bravenboer*, *Catharina Ziekenhuis, Eindhoven*
- Dr. C.H.H. ten Napel*, Dr. G.J. Kootstra, *Medisch Spectrum Twente, Enschede*
- Dr. H.G. Sprenger*, Dr. S. van Assen, Dr. J.T.M. van Leeuwen, *Universitair Medisch Centrum, Groningen.*
- Dr. R. Doedens, Dr. E.H. Scholvinck, *Universitair Medisch Centrum, Beatrix kliniek, Groningen*
- Prof. dr. R.W. ten Kate*, Dr. R. Soetekouw, *Kennemer Gasthuis, Haarlem*
- Dr. D. van Houte*, Dr. M.B. Polée, *Medisch Centrum Leeuwarden*
- Dr. F.P. Kroon*, Prof. dr. P.J. van den Broek, Prof. dr. J.T. van Dissel, Dr. E.F. Schippers, *Leids Universitair Medisch Centrum, Leiden*
- Dr. G. Schreij*, Dr. S. van der Geest, Dr. S. Lowe, Dr. A. Verbon, *Academisch Ziekenhuis Maastricht*
- Dr. P.P. Koopmans*, Drs. C. Bleeker, Dr. R. van Crevel, Prof. dr. R. de Groot, Drs. H.J.M. ter Hofstede, Dr. M. Keuter, Dr. A.J.A.M. van der Ven, *Universitair Medisch Centrum St. Radboud, Nijmegen*

- Dr. M.E. van der Ende*, Dr. I.C. Gyssens, Drs. M. van der Feltz, Drs. Mendoca de Melo, Dr. J.L Nouwen, Dr. B.J.A. Rijnders, Drs. T.E.M.S. de Vries, *Erasmus Medisch Centrum, Rotterdam*
- Dr. G. Driessen, Dr. M. van der Flier, Dr. N.G. Hartwig, *Erasmus Medisch Centrum, Sophia, Rotterdam*
- Dr. J.R. Juttman*, Dr. M.E.E. van Kasteren, Dr. C. Van de Heul, *St. Elisabeth Ziekenhuis, Tilburg*
- Prof. dr. I.M. Hoepelman*, Dr. M.M.E. Schneider, Prof. dr. M.J.M. Bonten, Prof. dr. J.C.C. Borleffs, Dr. P.M. Ellerbroek, Drs. C.A.J.J. Jaspers, Dr. T. Mudrikova, *Universitair Medisch Centrum Utrecht*
- Dr. S.P.M. Geelen, Dr. T.F.W. Wolfs, Dr. T. Faber, *Wilhelmina Kinderziekenhuis-UMC, Utrecht*
- Dr. A.A. Tanis*, *Ziekenhuis Walcheren, Vlissingen*
- Dr. P.H.P. Groeneveld*, *Isala Klinieken, Zwolle*
- Dr. J.G. den Hollander* *Medisch Centrum Rijnmond Zuid, locatie Clara, Rotterdam*
- Dr. A. J. Duits, Dr. K. Winkel, *St. Elisabeth Hospitaal/Stichting Rode Kruis Bloedbank, Willemstad, Curaçao.*

Virologists

- Dr. N.K.T. Back, Dr. M.E.G. Bakker, Prof. dr. B. Berkhout, Dr. S. Jurriaans, Dr. H.L. Zaaijer, Academisch Medisch Centrum, Amsterdam
- Dr. Th. Cuijpers, CLB Sanquin Blood Supply Foundation, Amsterdam
- Dr. P.J.G.M. Rietra, Dr. K.J. Roozendaal, Onze Lieve Vrouwe Gasthuis, Amsterdam
- Drs. W. Pauw, Dr. A.P. van Zanten, P.H.M. Smits, Slotervaart Ziekenhuis, Amsterdam
- Dr. B.M.E. von Blomberg, Dr. P. Savelkoul, Dr. A. Pettersson, VU Medisch Centrum, Amsterdam
- Dr. C.M.A. Swanink, Ziekenhuis Rijnstate, Arnhem
- Dr. P.F.H. Franck, Dr. A.S. Lampe, HAGA ziekenhuis, locatie Leyenburg, Den Haag
- C.L. Jansen, Medisch Centrum Haaglanden, locatie Westeinde, Den Haag
- Dr. R. Hendriks, Streeklaboratorium Twente, Enschede
- Dr. C.A. Benne, Streeklaboratorium, Groningen
- Dr. D. Veenendaal, Dr. J. Schirm, Streeklaboratorium Volksgezondheid Kennemerland, Haarlem
- Dr. H. Storm, Drs. J. Weel, Drs. J.H. van Zeijl, Laboratorium voor de Volksgezondheid in
- Friesland, Leeuwarden
- Prof. Dr. A.C.M. Kroes, Dr. H.C.J. Claas, Leids Universitair Medisch Centrum, Leiden
- Prof. Dr. C.A.M.V.A. Bruggeman, Drs. V.J. Goossens, Academisch Ziekenhuis Maastricht
- Prof. Dr. J.M.D. Galama, Dr. W.J.G. Melchers, Dr. Verduyn-Lunel, Universitair Medisch Centrum St. Radboud, Nijmegen
- Dr. G.J.J. Doornum, Prof. Dr. A.D.M.E. Osterhaus, Dr. M. Schutten, Erasmus Medisch Centrum, Rotterdam
- Dr. M.G. Niesters, Universitair Medisch Centrum Groningen

- Dr. A.G.M. Buiting, St. Elisabeth Ziekenhuis, Tilburg
- Dr. C.A.B. Boucher, Dr. R. Schuurman, Dr. E.Boel, Universitair Medisch Centrum Utrecht
- Drs. M. Wulf, Dr. A.F. Jansz, Catharina Ziekenhuis, Veldhoven

Pharmacologists

- Dr. A. Veldkamp, Medisch Centrum Alkmaar
- Prof. Dr. J.H. Beijnen, Dr. A.D.R. Huitema, Slotervaart Ziekenhuis, Amsterdam
- Dr. D.M. Burger, Universitair Medisch Centrum St. Radboud, Nijmegen
- Drs. H.J.M. van Kan, Academisch Medisch Centrum (UvA), Amsterdam

HIV Treatment Centres

- Academisch Medisch Centrum (UVA), Meibergdreef 9, 1105 AZ Amsterdam
- Academisch Ziekenhuis Maastricht, P. Debyelaan 25, 6229 HX Maastricht
- Catharina Ziekenhuis, Postbus 1350, 5602 ZA Eindhoven
- Emmakinderziekenhuis, AMC Amsterdam, Meibergdreef 9, 1105 AZ Amsterdam
- Erasmus Medisch Centrum, Dr. Molewaterplein 40, 3015 GD Rotterdam
- HAGA, locatie Leyenburg, Leyweg 275, 2545 CH Den Haag
- Isala Klinieken, locatie Sophia, Dokter van Heesweg 2, 8025 AB Zwolle
- Kennemer Gasthuis, locatie EG, Boerhaavelaan 22, 2000 AK Haarlem
- Leids Universitair Medisch Centrum, Rijnsburgerweg 10, 2333 AA Leiden
- Medisch Centrum Alkmaar, Wilhelminalaan 12, 1815 JD Alkmaar
- Medisch Centrum Haaglanden, locatie Westeinde, Lijnbaan 32, 2512 VA Den Haag
- Medisch Centrum Leeuwarden, locatie Zuid, H. Dunantweg 2, 8934 AD Leeuwarden
- Medisch Centrum Rijnmond Zuid, locatie Clara, Olympiaweg 350, 3078 HT Rotterdam
- Medisch Spectrum Twente, Postbus 50, 7500 KA Enschede
- Onze Lieve Vrouwe Gasthuis,
- Locatie Oosterpark, 1e Oosterparkstraat 179, 1091 HA Amsterdam
- Locatie Prinsengracht, Prinsengracht 769, 1017 JZ Amsterdam
- St. Medisch Centrum Jan van Goyen, Jan van Goyenkade 1, 1075 HN Amsterdam
- Slotervaartziekenhuis, Louwesweg 6, 1066 CE Amsterdam
- Erasmus Medisch Centrum – Sophia, Dr. Molenwaterplein 40, 3015 GD Rotterdam
- St. Elisabeth Ziekenhuis, Hilvarenbeekseweg 60, 5022 GC Tilburg
- St. Lucas Andreas Ziekenhuis, Postbus 9243, 1006 AE Amsterdam
- Streekziekenhuis Walcheren, Koudekerkseweg 88, 4382 EE Vlissingen;
- Universitair Medisch Centrum Groningen, Oostersingel 59, 9715 EZ Groningen
- Universitair Medisch Centrum Groningen Beatrix Kliniek, Oostersingel 59, 9715 EZ Groningen
- Universitair Medisch Centrum St. Radboud, Postbus 9101, 6500 HB Nijmegen
- Universitair Medisch Centrum Utrecht, Heidelberglaan 100, 3584 CX Utrecht
- VU Medisch Centrum, De Boelelaan 1117, 1081 HV Amsterdam
- Wilhelmina Kinderziekenhuis Utrecht, Postbus 85090, 3508 AB Utrecht

- Ziekenhuis Rijnstate, Wagnerlaan 55, 6815 AD Arnhem
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